EDUCATIONAL SCREEN AND

AUDIOVISUAL

GUIDE

January. 1961

The grandchild of the little red schoolhouse
—see pages 3, 15

NDEA At Midpoint—page 13

A Special Report: Midwest Airborne Television—beginning page 15

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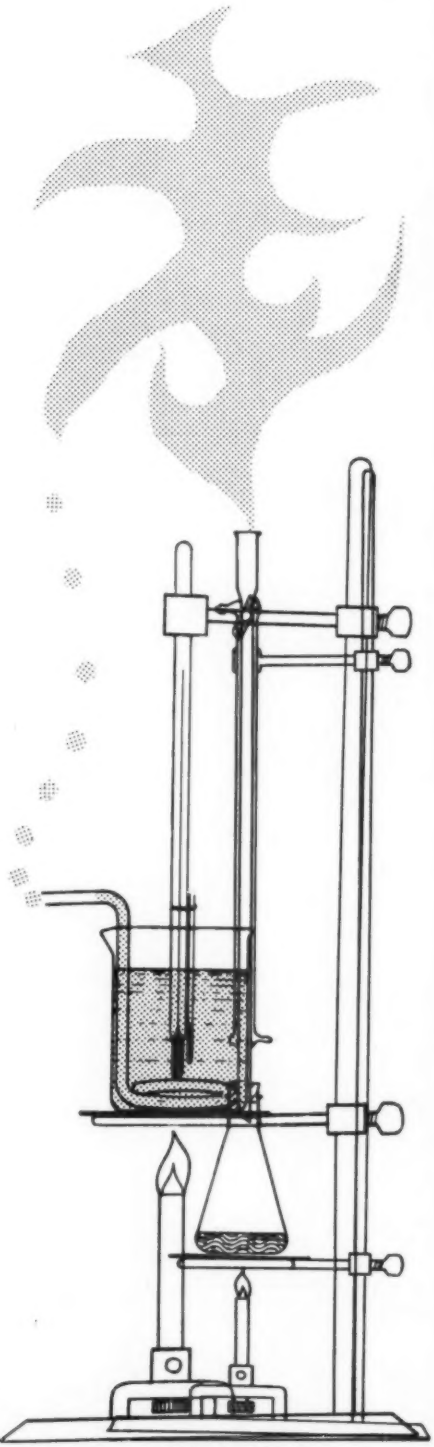

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The Cover Scene

EdScreen is pleased to present, this month, a special report on a hot topic: the demonstration of the use of airborne television transmittal for educational purposes. The first actual 'in use' testing begins this month, and evaluation—both official and private (which we will no doubt begin hearing immediately)—will be under way.

The three articles we carry this month on MPATI have the objective of presenting the facts on a still-very-new topic. We will welcome comments and opinions, but for more information on the program will refer questioners to the headquarters of the operation at Purdue University.

On the cover this month, Grove Webster of Purdue, a member of the technical staff of the program, peers down the interior of one of the four-engine aircraft which will carry the TV transmitting equipment.

EDUCATIONAL SCREEN & AVGUIDE

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EDUCATIONAL SCREEN AND

AUDIOVISUAL

GUIDE

January, 1961 Volume 40, Number 1, Whole Number 393

EDITORIAL

12 Electronic Space Dividers

SPECIAL FEATURE

An Exciting Experiment in Education

15 The Midwest Program on Airborne Television Instruction *Bryghte D. Godbold*
18 Economics of the Midwest Program
21 Math, Music, Art, Science . . .

ARTICLES

13 NDEA At Midpoint *Seerley Reid*
25 Teaching Machines: A Primer *Fred M. Newmann*

NEWS REPORT

11 EFLA Regional Meetings

DEPARTMENTS AND FEATURES

3 Cover Scene
6 News
10 Letters
28 Film Evaluations *L. C. Larson, Carolyn Guss*
31 Filmstrips *Irene F. Cypher*
35 Audio *Max U. Bildersee*
38 AV in the Church Field *William S. Hockman*
40 Trade Directory
41 New Equipment and Materials
43 AV Industry News
49 Helpful Books
50 Directory of Sources
51 Index to Advertisers

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BUSINESS & EDITORIAL ADDRESS: EDUCATIONAL SCREEN & AUDIO-VISUAL GUIDE, 2000 Lincoln Park West Bldg., Chicago 14, Illinois. Contents indexed in the Wilson Educational Index. For microfilm volumes, write University Microfilms, Ann Arbor, Michigan.

SUBSCRIPTION PRICE (U. S. currency or equivalent): Domestic—$4 one year, $6.50 two years, $8 three years. Canadian and Pan-American—50 cents extra per year. Other foreign—$1 extra per year. Single copy—45 cents. Special August Blue Book issue—$1.00.

CHANGE OF ADDRESS should be sent immediately to insure uninterrupted delivery of your magazine. Allow five weeks for change to become effective.

EDUCATIONAL SCREEN & AUDIO-VISUAL GUIDE is published monthly by Educational Screen, Inc. Publication office, Louisville, Kentucky. Business and Editorial Office, 2000 Lincoln Park West Building, Chicago 14, Illinois. Printed in the U. S. A. Entered as second-class matter November, 1959, at the post office at Louisville, Kentucky, under the Act of March 3, 1879.

ADDRESS ALL MAIL (Subscriptions, Change of Address, Forms 3579) to: 2000 Lincoln Park West Bldg., Chicago 14, Illinois. Second-class postage paid at Louisville, Kentucky.

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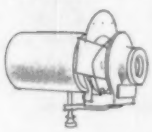

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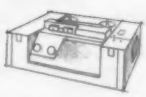

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News

people *organizations* *events*

Two State Groups Hold First Joint AV Meeting

A capacity crowd met at McLoughlin Junior High School in Vancouver, Washington, on October 14-15 for the first joint meeting of two state audiovisual organizations, the Washington Department of Audio-Visual Instruction and the Oregon Audio-Visual Association. The theme for the conference was "Automation and the Curriculum."

A report on team teaching as seen across the nation was given by two Oregonians who have been investigating the possibilities of using this technique in Oregon schools. A three-man panel also discussed educational TV—its limitations and its potentials.

The automation theme continued on Saturday with a section on teaching machines presented by William Deutsch of Califone Company. Language laboratories were discussed by a professor and two teachers who have been actively using them. A rundown on research now underway, and possibilities for future research project grants under Title VII of the NDEA, was given by the United States Office of Education. At the closing luncheon, a Navy representative demonstrated audiovisually how the Navy uses AV materials in its teaching program.

DAVI president James Finn gave the banquet address.

CCTV Can Help Fill In For Teacher Lack, Study Shows

Closed-circuit television and tape recordings may constitute an acceptable "stop-gap" to meet ever-increasing demands for trained foreign language teachers, particularly at the elementary school level, a progress report from the University of Illinois Foreign Language Instruction Project indicates.

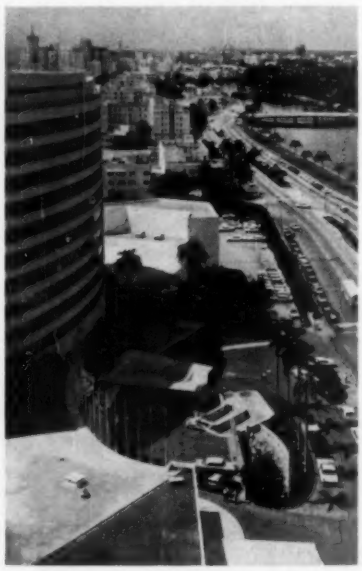
Objective of the project, sponsored jointly by the University and the U. S. Office of Education, is to find a satisfactory way to put study of foreign languages into the elementary schools while qualified teachers—not presently available—are being prepared to take over this instruction.

The experiment involved two groups of fourth grade children, one "guided" by teachers unfamiliar with Spanish in lessons conducted by tape-recording and television, the other taught conventionally by foreign language specialists. At the end of a year, tests show the experimental group doing nearly as well as the contrast group.

In tests covering comprehension, pronunciation, immediacy of response, appropriateness of response and composite skills, the "guided" group achieved a composite score equal to 92 per cent of that scored by the children who received conventional instruction.

DAVI Planning Side Trips For Miami Convention

For members attending the convention of the Department of Audio-Visual Instruction (NEA) in Miami next April, a variety of study trips and sightseeing tours have been arranged: The Everglades National Park and a



Miami Beach, scene of 1961 DAVI Convention.

Seminole Village; the Miami Serpentarium, where venom for medicinal purposes is extracted; the Monkey Jungle, where the monkeys are loose and the spectators are caged; bird farms teeming with exotic rare birds; orchid jungles, with orchids growing from trees.

In Florida, public schools are operated by a county unit system, which provides equal opportunity for boys and girls in any county in the State. Enrollment in Dade County, the Greater Miami area, now exceeds 165,000 in 176 schools. From 10 to 15 new schools are required each year to keep pace with the population growth. More than 1,000 new teachers are added each year coming from every state in the Union and many foreign countries. At least one-third of the teachers have five or more years of education and all have four-year degrees.

A $70,000,000 annual budget is required for this, the eighth largest school system in the nation. An audiovisual center serves the schools, and an extensive educational television system with hourly telecasts provides a variety of programs for pupils in every school.

Long Island AV Council Publishes Anniversary Issue

The Long Island Audio Visual Council has issued a special 25th anniversary edition of its publication *AVISO*. For this issue, top audiovisual people around the country were queried for their opinions on past developments and their projections on the future of AV in education.

Information about this special edition can be obtained by writing the Long Island Audio Visual Council, Box 174, Garden City, L. I., N. Y.

Texans Refute Charges Against New ETV Outlet

"An inexcusable disservice to a fine cooperative endeavor," was the brand applied by W. W. Jackson of San Antonio, chairman of the Southwest Texas Educational Television Council, to a story about San Antonio's projected educational television station appearing in the November 14 issue of *Time* magazine.

"The story is full of factual inaccuracies which are misleading and, even worse, it attributes a completely erroneous purpose for the station's activation," said Dr. Jackson. He denied the story's statement that the station "will be strictly a platform for great teachers to shame poor ones." No such idea has ever been entertained by the board of directors, Dr. Jackson said. "It is fallacious to imply that Channel 9 will be used to espouse any one theory of what constitutes good teaching. We will be offering programs designed by teachers themselves to be of assistance in conducting their own courses."

The *Time* story also says that "the

(Continued on page 8)

At the new Monroe Elementary School, Monroe, Iowa, selected by A.A.S.A. for its exhibit of outstanding school designs, R. J. Hekel, Superintendent, says:

"We're convinced that A-V increases learning efficiency by 20 to 30 percent."

"Even slow learners grasp meanings quickly when they see a subject in context.

"After showing a movie on rural fire prevention, for example, nearly every pupil readily understood basic concepts of the subject. Before A-V, it was a slow process, sometimes tedious, to drum home the same subject.

"We frequently show movies—and we take care to see that they add to the learning experience.

"To show our movies, we selected the quietest, easiest-to-operate 16mm sound projector we could find—the KODAK PAGEANT PROJECTOR.

"Its quiet operation is not distracting, and we usually don't have to show a new teacher or student more than twice how to operate it with ease. This means we don't have to lose valuable class time.

"We must move our projectors about the school, so we don't like cumbersome, heavy machines. This Kodak Pageant is as light as any we've seen. And we know there's good reason for this projector's weight. For instance, from our examination of the sound amplifier, we found this to be a quality sound system, obviously not skimped on in manufacture. This sound quality is exactly what we need to accommodate showings in either classroom or auditorium."

Test the Kodak Pageant Projector yourself. See how easy it is to set up, how quietly it operates. Call your Kodak A-V Dealer for a demonstration, or write for Pageant Bulletin V3-22. No obligation, of course.

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new station will shun canned material from the BBC and the Ford Foundation." This is quite untrue, said Jackson. While no specific programs of any type have been selected yet, the Channel 9 directors expect the station to become an affiliate of the National Educational Television network (Ford Foundation supported) which is making quality educational programs available to virtually all of the educational television stations in the nation. It is hoped that such programs will include BBC dramas, Boston symphony performances and other great offerings.

L. C. Larson of Indiana On Mission To Africa, Europe

L. C. Larson, director of the Audio-Visual Center of Indiana University, left November 21 on a five week tour of Africa and Europe. His trip took him to Ghana, Nigeria, Sierra Leone, Liberia, France, and Belgium. He returned to Bloomington on Christmas Eve.

Working with the Ministry of Information in Sierra Leone, Larson conducted a review of the contract which calls for the Audio-Visual Center to furnish advisory services and assistance in the development, production and use of communications media in the educational system and for programs in agriculture, health, and general community improvements.

After leaving Sierra Leone, Mr. Larson made a tour of Liberia to study the existing communications media program in that country. Paris was next stop, with the point of interest there a visit with UNESCO. From Paris he flew by helicopter to Brussels where he visited Audiovision Belge to discuss the distribution of Indiana University films and NET films on the continent.

University of Akron Will Open Own TV System

The University of Akron plans to begin operation of a closed-circuit TV system reaching 35 classrooms. The system, being installed by RCA, will carry courses for credit ranging from mathematics and science to public speaking. Provision also is being made for the University of Akron TV Center which will broadcast over education channel 55 and will produce instructive courses for distribution over the Ohio State TV network. Additionally, it will be possible to telecast from the campus studio through the facilities of WAKR-TV, Akron.

Dr. Ray H. Sandefur, head of the speech department, said the university will commence closed-circuit transmission of five credit courses at the beginning of the next semester. The courses are Analytic Geometry, Reasoning and Understanding in Science, Education in American Society, and two courses in Effective Speaking, one introductory in nature and the other more advanced.

Bell & Howell Antiques For DAVI Archive Display

Important additions to DAVI's historic equipment and publications archives are represented in recent gifts from the Bell & Howell Company. On direction of president Charles H. Percy, the company's patent museum was opened by A. C. Sonnenberg for DAVI archivist Wm. F. Kruse. Six pieces of vintage equipment and a fascinating collection of early literature were selected.

The equipment includes a "Filmo" 16mm camera and projector dating back to about 1923; a Pathescope 28mm projector, ca. 1915; a 35mm Barker Brothers combination motion picture projector and camera ca. 1910; a DeVry filmstrip projector made about 1925; and a Kodaslide projector in plastic case ca. 1937.

The literature goes back to 1915, the oldest a collection of testimonials to the B&H professional 35mm camera, including Robert J. Flaherty's shooting of "Nanook," and a budget calling for eight actors at $60 a week, cameraman at $35 a week, and carpenters and electricians at the same rate. The "latest" of the literature describes the DeVry World War II "Jan" now made exclusively by Bell & Howell, and the relatively current *Architect's Visual Equipment Handbook* and *Acoustic Treatment of Auditoriums.*

Photographic Society Plans Fine Arts Show for 1961

The Photographic Society of America has mailed a leaflet to all members and all affiliated clubs inviting submission of pictures for the third Photography in the Fine Arts exhibit now scheduled for 1961.

Workshop On Techniques For Illinois AV Specialists

A county-wide workshop and institute on visual education at Willowbrook High School, Villa Park, Ill., featured three "you can do-it-yourself" demonstration sessions on photography and on production of materials for opaque and overhead projection. Each 30-minute session was repeated three times (between 4:30 and 6 p.m.) to give everyone a chance to take in all three.

A dozen or more commercial exhibits ringed the main lobby.

After a school-cooked chicken dinner, the evening assembly program heard Dr. Walter Wittich of the University of Wisconsin demonstrate the role of audiovisuals of classroom instruction. Included in his demonstration were an excerpt from the silent Yale "Chronicles of America" films, and sound color motion pictures, filmstrips and tape recordings for a unit on our 50th state. Saturation use of audiovisuals in one community brought almost unbelievably improved results, according to Wittich.

(Continued on page 10)

Alan Morrison, left, president of the Industrial Audio-Visual Association, chats with Frank Lovejoy and Roy Mumma of U.S. Steel. Lovejoy addressed the fall workshop of the association in Princeton, N. J., in October.

Charlie
the Destroyer

Eyebrows are not enough!

It's true... Nature gave us eyebrows to protect our eyes from overhead light, but unfortunately, eyebrows can't shut out reflected light. Glare (reflected light) can only be controlled by diverting the strong sunlight *upward* before it enters the room and only a Venetian Blind can give perfect control of sunlight, from rooms suitable for Audio-Visual instruction to perfect indirect light.

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- Displays filmstrips in a neat, orderly, handy arrangement!
- Saves the teacher time and trouble in locating filmstrips!

"The Standard Filmstrip Table-*file* is to a filmstrip what a bookcase is to a book," says one audio-visual director. And no wonder, because this handy Table-*file* keeps filmstrips in order, keeps them filed and displayed in a readily accessible arrangement.

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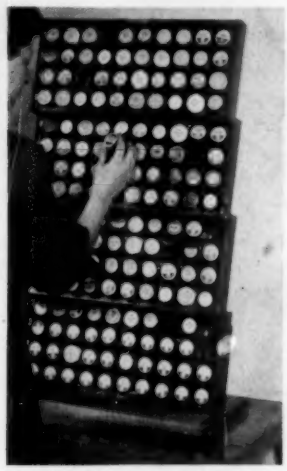

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- sound filmstrips
- disc records
- recording tape
- 2" x 2" slides

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Latest additions to audiovisual educational equipment in the San Jose, Calif., East Side Union High School District are the wireless microphones of the "Vega-Mike" type that got so strong a work-out (and much nation-wide TV exposure) at the presidential nominating conventions. Tom Malone (above), history teacher at James Lick High School, listens to student recite over hand-held wireless microphone. The instructor wears a similar "cord-less" mike lavalier style.

News *continued*

Merrill Gates, assistant county superintendent, reported an increase in the DuPage County cooperative library from 1,310 films to 2,380 during the past year, and an increase in weekly circulation from a top of 425 last year to a normal weekly movement of more than 600. County superintendent Roy DeShane is and has long been an active member of the Illinois Audio-Visual Association.

Franklin Institute To Expand Audiovisual Operations

The Franklin Institute, Philadelphia, has announced an accelerated expansion program to help meet the growing national crisis in science education.

Wynn Laurence LePage, institute president, said a $2,500,000 "Program to Advance Science Education," to be in full operation in four years, will include: A Junior Science Library at the Institute, stocked with volumes written for youth on all phases of science, and supervised by a trained librarian.

A research program in science education which would search for new teaching techniques, particularly for teachers in the elementary and secondary levels.

Television and radio facilities for originating science education programs for broadcast through existing radio and TV channels to schools and homes.

A "science museum on wheels" to take exhibits and special demonstrations of scientific principles to outlying areas.

A Junior Science Center where students will be able to obtain materials and perform experiments in special laboratory - classrooms under qualified supervision.

Creative Film Production To Be Recognized at Festival

Filmmakers whose 16mm motion pictures are produced "for love rather than money" are to be invited to submit their 1960 films for special Independent Film - Makers' Showcase screenings at the American Film Festival next April in New York City. In response to widely expressed interest in the creative and experimental work of independent young film producers, the Educational Film Library Association, sponsor of the festival, is planning these new "Showcase" screenings, scheduled for April 21 at the Barbizon-Plaza Hotel, where the Festival will be held again in 1961.

Letters

To the Editor:

It is with a sense of personal loss that I noted the passing of Bill Lewin (*Ed Screen*, October, 1960). He had been a pillar of strength in the formative years of our industry and profession and one could always find him in there fighting for AV. We were competitors during the 14 years I spent in the AV publishing field with *Film-AV World* and *Teaching Tools* and I always found Bill eminently fair.

I am happy to note that the title of your publication includes the name Bill created. This will serve as a monument to him. If any further steps are developed to honor his memory please allow me to join such a movement.

Syd Cassyd
Los Angeles, Calif.

Recent EFLA Regional Meetings Discuss Current Ed-Film Spectrum

"The history of the organized use of audiovisual materials in the United States is encompassed within the professional life and experience of many persons in this room," Dr. Edgar Dale of Ohio State University told his audience on a recent evening in New York City. The occasion was one of the featured events of the 1960 eastern regional conference of the Educational Film Library Association, a sesson co-sponsored by the New York Society for the Experimental Study of Education.

Another conference speaker with a long range view of the AV field was EFLA's administrative director Emily S. Jones who reported on EFLA's present program and potentialities. She recalled the early days of EFLA, some 17 years ago, when "a few public libraries . . . were already beginning to circulate films, and of course school systems in a number of cities had audiovisual departments."

At November meetings in Tucson, Detroit and New York, EFLA members and other conference registrants joined in panel and audience discussions. The Tucson session was devoted to matters involved when "The Classroom Teacher Selects a Film," a discussion led by Dr. Raymond E. Denno, executive vice president of Sutherland Educational Films. The New York meeting featured "News and Views of Film Library Administration," with Iola Tryon, Margaret Divizia and I. C. Boerlin among the speakers. The Detroit program event was billed as "Movies About Movies —the Anatomy of a Film," presided over by James L. Limbacher of the Dearborn Public Library who shared the floor with such invited guest critics as Sidney Dash and Leonard Feldman of Sterling Educational Films, William Rudy of Wayne State University, and James Cole of Indiana University.

EFLA's central regional conference in Detroit provided opportunities to visit a number of outstanding audiovisual operations in a series of special tours—through the studios of educational television station WTVS at the University of Detroit, the studios of the Jam Handy Organization, and the Wayne County Library Audio-Visual Center. Both the Detroit and New York conferences featured demonstrations, with audiences showing special interest in new 8mm sound films and projectors as demonstrated by such leading manufacturers as Fairchild and Eastman Kodak.

Among other conference programs of both special and general interest was a lively New York session posing the question "Why Isn't There a Film On ——?". Norman Moore of the Rochester Public Library, Mrs. Marcus Friedlander of the N. Y. League of Women Voters, and Dr. Edwin Foster of the American Heart Association led the film users in naming areas of information in which they found AV materials to be inadequate, mentioning democratic procedures, comparative religions, music, general health, mathematics, recreation, and political crisis areas of the world, among many others. The point of view of the 16mm producers was presented by Albert J. Rosenberg of McGraw Hill Textfilms, Erik Barnouw of Columbia University, and the Reverend Donald Kilphardt of the National Council of Churches, who severally explored the role of the sponsor and the film user.

Coffee breaks, luncheons, and other informal get-togethers enabled AV users, producers, distributors and other conference registrants to argue or agree on many problems and projects of mutual interest and concern. James Limbacher, chairman of the central regional conference, noted that at one morning's "Crackerbarrel Session," conversation and controversy ranged from the demise of H. W. Wilson's *Educational Film Guide* and the preservation of archive films by transferral to 8mm film, through inter-library exchange of lists of pulled prints to increased availability of repair footage on non-current films.

● EFLA announces its newest Service Supplement, a 14-page annotated list of nearly 200 "Films and Filmstrips on Audio-Visual Materials and Methods" dealing with 22 phases of the audiovisual field from Animation to Utilization. Each listing is complete with a brief description of the content of the film or filmstrip and the name of the source. Distributed without charge to EFLA members as the first of the association's 1960-61 series of regular Service Supplements, this report is available to non-members at $1.00 per copy.

Giving and getting first-hand information on new 16mm films at the EFLA central regional conference in Detroit are, from left, Arthur Brown, Film Center, Chicago; Renwick Garypie, Wayne County (Mich.) Audio-Visual Center; Albert Lavastida, University of Michigan; Sidney Dash, Sterling Educational Films, New York City; and James Cole, Indiana University Audio-Visual Center.

A highlight of the Central Regional Conference was a luncheon at which the association's administrative director, Emily S. Jones, reported on "EFLA—Past, Present and Future." At the speaker's table were Mrs. Evelyn Adams, Ford Motor Company film library; David Glick, Henry Ford Museum; James L. Limbacher, Dearborn Public Library; Miss Jones; and Renwick Garypie, Wayne County (Mich.) Public Library.

Electronic Space Dividers

Paul C. Reed

Forward looking educators, feeling entrapped and frustrated by old school buildings they must continue to use, may take cheer. Their pupils need no longer be confined by the existing divisions of space in the buildings. Now there are electronic space dividers. These are not really new machines and gadgets. Rather, they result from new thinking about newer media we already have.

Untraditional educators who dare to think freshly about ways and places in which learning best takes place, fairly drool when they examine the plans and design of some of the new school buildings. Look in Massachusetts at the new Wayland Senior High or South High in Newton, for instance. Or in Maryland at North Hagerstown High School. Or the new high school in Stillwater, Oklahoma.

In these exciting new school buildings architects have responded with daring imagination to the discovery by educators that learners should not always sit in groups of thirty. Some learning activities demand separation. Others are more effective in larger groupings of one or two hundred pupils. The need is for flexible space arrangements to accommodate groups of varying sizes. This is the problem being solved so well in the creative design of some new buildings. But what about the old buildings, especially those with flexible teachers restricted by immovable partitions?

That's the place for an electronic space divider, for closed circuit television. But wait! Don't stop reading. Let's pursue this a little further. We're not talking about assembling pupils in larger groups just to watch television. We're talking about using television to figuratively destroy walls. Leave the learners right in the groups where they are. Then with closed circuit television, transmit sight and sound signals through and around any kind of partition that exists. Thus groups of any size may be re-assembled instantaneously by television, no matter where the individuals are located. They can be brought together electronically for common seeing and hearing.

Let's be more specific. Take any old school, for instance. Equip it completely for closed circuit television. Assume there are three classes located in various parts of the building you want to bring together to see a demonstration. They stay where they are, but television re-assembles them into a new group of a hundred for the purpose of seeing that demonstration. Or, if you want to bring all the students together for an assembly, there is no need for an auditorium. Television, with the flip of a switch, can instantaneously obliterate all interior walls and assemble the whole student body to see and hear the same things.

But what about sub-dividing groups electronically. How do you push buttons to make groups into smaller groups? It's easier than you may have thought. In fact they're already doing this in foreign language teaching. With tape recorders, record players, microphones, and with earphones for each learner, groups can be split up into new groupings. Each sub-group can listen and respond to the sounds and words most meaningful to them at that time. Maybe soon there will even be tape recordings of absolute silence for those who want complete isolation for solitary thinking and dreaming.

Seriously—and believe me, I am serious—new media for communicating ideas and information and inspiration are demanding all the imagination and inventiveness of which we are capable. Sounds from a television receiver can be routed through earphones for small groups within large groups. Self-instructing teaching machines can be used by individuals within a group. You don't have to have a machine for everybody. Sound filmstrips can be recorded for 8mm sound motion picture projection.

New electronic media can be thought of and used as a way of overcoming the limitations of existing walls, as space dividers to regroup students for more efficient learning. All of our newer media can be used more effectively. So far we've hardly started to use what we have. What are we waiting for? It's 1961!

NDEA At Midpoint

by Seerley Reid

THE National Defense Education Act of 1958, enacted into law on September 2, 1958, has a life expectancy of approximately four years. Most of its provisions expire on June 30, 1962, so that we can say today that NDEA is at midpoint. What has been accomplished in terms of its overall purposes and goals? What have been its achievements in the developmental uses of audiovisual equipment and instructional materials in schools and colleges? And, perhaps most importantly, what is its future?

These are not easy questions and there are no facile answers. Let me hazard a few professional guesses and personal hopes.

First, I believe that NDEA is a most remarkable legislative directive toward the improvement of U.S. education. U.S. Commissioner of Education Lawrence G. Derthick has called it "the third milestone in the history of federal aid to education" and has noted its special quality: "that our nation's security in this age, with the most complex internal and international problems we have ever faced, requires the fullest development of the mental resources and technical skills of our students, and makes it imperative that those inbalances identified in NDEA be speedily corrected."

The National Defense Education Act, rightly or wrongly, does not provide general aid to education. Rather it is, in purpose and in fact, selective legislation aimed specifically toward strengthening certain weaknesses in our schools and colleges which were most apparent to the Congress in 1958. Viewed against this background of national concerns following the launching of Sputnik, NDEA must be considered quality legislation directed primarily, as its title indicates, toward the national defense of the United States. From such a viewpoint, the various titles and parts of NDEA, seemingly disparate in intent and certainly separate in administration, do group under four major headings or purposes. It is helpful to me to view NDEA from such a perspective. I hope that such a view will be helpful also to you.

(a) *Identification of and assistance to superior students.* Title V-A provides for academic and aptitude testing programs in secondary schools and for the strengthening of guidance and counseling programs in these schools. Title V-B provides for counseling and guidance training institutes to improve the qualifications of such counselors. Title II provides that special consideration shall be given, in the selection of college students to receive federal loans, to those with superior academic backgrounds.

(b) *Improvement of teachers and teaching.* Title II provides that special consideration, in making federal loans to college students, shall be given to those who express a desire to teach in elementary or secondary schools; and, further, that up to 50 percent of such loans shall be cancelled at the rate of 10 percent per year, if borrowers serve as full-time teachers in public schools following their graduation. Title III provides for payments to state educational agencies for the expansion and improvement of supervisory services in the fields of science, mathematics, and modern foreign languages.

Title IV provides for the establishment of new or expanded graduate programs in colleges and universities and for the award of fellowships to assist students to engage in graduate study in these programs with preference to be given to those interested in teaching in institutions of higher education. Title VI is focused almost entirely upon improvement of the teaching of modern foreign languages—through the establishment of language and area centers, research and studies, and language institutes.

(c) *Improvement of instructional equipment, materials and methods.* Title III, as we all must know by now, provides federal funds for the "acquisition of laboratory and other special equipment, including audiovisual materials and equipment and printed materials (other than textbooks), suitable for use in providing education in science, mathematics or modern foreign language in public elementary or secondary schools." This provision in Title III is the "audiovisual heart" of NDEA. But provision for and utilization of instructional materials (including audiovisual) are also authorized in the Title VI programs of language and area centers, research and studies, and language institutes. In the last instance, the Act specifically states ". . . advance training, particularly in the use of new teaching methods and instructional materials, for individuals who are engaged in or preparing to engage in the teaching, or supervising or training teachers, of any modern foreign language in elementary or secondary schools." Also, Title VII is directed toward the improvement of instructional materials and methods, specifically new educational media, by grants for research and experimentation and projects for disseminating information about the new media.

(d) *Assistance to instructional programs in science, mathematics and modern foreign languages.* Title II provides that special consideration shall be given to loans to students whose background indicates a superior capacity or preparation in science, mathematics, engineering or a modern

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Dr. Reid is assistant director, Educational Media Branch, U.S. Office of Education. His opinions voiced in this article are personal and do not necessarily reflect official positions of USOE.

Abbreviated report of appropriations for fiscal years 1959 and 1960 (September 2, 1958 through June 30, 1960).

Title II	Student loans:	
	Federal contributions to loan funds	$ 70,392,972
	Loans to educational institutions	1,307,028
Title III	Science, mathematics, and modern foreign language instruction:	
	Acquisition of equipment and minor remodeling	
	Grants to States	102,080,000
	Loans to nonprofit private schools	13,920,000
	State supervision and administration	5,350,000
Title IV	National defense fellowships	17,950,000
Title V	Guidance, counseling, and testing:	
	Grants to States	22,400,000
	Institutes for counseling personnel	8,480,000
Title VI	Modern foreign languages:	
	Area centers	4,250,000
	Research	6,550,000
	Institutes for language teachers	4,820,000
Title VII	Educational media research and information	4,600,000
Title VIII	Area vocational programs	10,750,000
Title X	State statistical services	2,150,000
	TOTAL	$275,000,000

foreign language. Title III is totally restricted, in its financial assistance programs, to science, mathematics and modern foreign language instruction. Title VI is focused totally upon the development of programs of instruction in modern foreign languages. And Title VIII, aimed at the training of skilled technicians in recognized occupations requiring scientific knowledge, authorizes the "purchase, rental or other acquisition, and maintenance and repair, of instructional equipment" and the "purchase of instructional supplies and teaching aids."

This categorical analysis of NDEA, while overly simplified, does provide a rational overview of the Act and a perspective in appraising the role of audiovisual instructional materials in the various programs being carried on under the Act. It is apparent to all of us, I believe, that Titles III, VI and VII have been and are most pertinently and significantly related to audiovisual developmental programs. At the same time, I would urge that each of us become familiar with all of the provisions of NDEA. Only by so doing can we truly evaluate its benefits and intelligently recommend future courses of action.

What have been the accomplishments of NDEA during the first half of its life? Both quantitatively and qualitatively, substantive answers are not easily available with the various and varying bases being used—authorizations, appropriations, allotments, obligations, encumbrances, commitments, expenditures, disbursements, etc. Each has its own definitive fiscal usefulness. But how would you like to manage your household finances using these different categories?

Over half of NDEA funds made available during its first two years went to the programs of Titles III, VI and VII, in each of which there are audiovisual provisions and requirements built into the Act itself. This does not mean, of course, that all of the $141,570,000 made available for the programs of Titles III, VI and VII during 1958-59 and 1959-60 were spent for audiovisual equipment, materials and programs. I would not even hazard a guess as to the NDEA funds which have so far been used for the extension and improvement of audiovisual education through the acquisition of equipment and materials, the training of teachers and supervisors in the use of such materials, and research and experimentation into the uses of these new educational media.

But while we—you and I—do not have precise statistical data concerning AV growth under NDEA, we do believe in its positive achievements during the past two years. We have convincing evidence through field reports, anecdotes, letters, newspaper articles, etc.—evidence not statistically summarizable but valid as an expression of faith from teachers, school administrators and the lay public. Significantly, the Department of Audiovisual Instruction (NEA) and the National Audiovisual Association are already making plans to urge the extension and expansion of NDEA after June 30, 1962.

What is the future of NDEA? Most of its Titles, as I noted earlier, have a termination date of June 30, 1962. Will it be extended? Should it be? Should it be modified or expanded? If so, in what ways and to what purposes? Let us assume a continuation of some, if not all, of NDEA's provisions. What changes would you make in these provisions? What new provisions would you add? Let me suggest a few which seem to merit consideration.

One frequently mentioned is that of expanding the provisions of Title III to include support for state supervisory services and the acquisition of equipment and materials (including audiovisual) to other academic subjects such as history, economics, and other social sciences; language arts with particular reference to reading, writing and speaking the English language; and the humanities and the arts.

Another suggestion is to extend the concept of teacher institutes, now confined to guidance and modern foreign languages, to other areas of the school curriculum. Somewhat related is the suggestion that the authority for research and experimentation and dissemination of information concerning new educational media be broadened to include all educational media rather than only those that are new.

Some college and university staff members have naturally suggested that federal assistance toward the acquisition of equipment and materials be extended to institutions of higher education as well as to public elementary and secondary schools. Before saying aye or nay to these suggestions and others relative to the future of NDEA, you must remember its basic aims: the correction of existing inbalances and an emphasis on the quality of students, programs teaching.

Now it's your turn. What are your suggestions?

The first experimental program in airborne television instruction gets under way in January. It could have resounding—and world-wide—effects in education. Because of the significance of this project we are devoting major attention to it in this issue.

—The Editors

The Midwest Program On Airborne Television Instruction

by Dr. Bryghte D. Godbold

Executive Vice President
Midwest Program on
Airborne Television Instruction

General Purposes and Plan

MPATI will telecast instructional courses, recorded on video tape, from a plane circling at high altitude over north-central Indiana to schools and colleges in six states of the surrounding region. Telecasts will begin on a partial schedule for a demonstration period on January 30, 1961. In the academic year 1961-1962, a full program will be broadcast. The area receiving the signal will be 150 to 200 miles in radius, perhaps larger; testing to be done with planes and mobile units prior to lesson telecasts will determine the exact limits. The telecast area will encompass parts of Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin.

The Ford Foundation has granted an appropriation of $4,500,000 for this project to the Midwest Council on Airborne Television Instruction. Other contributions are coming from private industry. The total cost will be about $7,750,000.

The Midwest Council was organized to afford educators of the region an agency to deal with finding solutions to some of the major problems facing American education today—the problems of offering a greater quantity of education to meet the needs of a growing school population and at the same time providing increased quality of instruction, and to do these things without raising the cost of education beyond foreseeable means.

The council decided on a major project involving television because this medium has proved its usefulness in providing instruction of high quality to numbers of students. The airborne method was selected because it can reach greater numbers at less cost than can ground-based transmitters. Capital and operating costs of airborne transmission are estimated at about one-third as much per pupil, given 5,000,000 pupils, as equivalent ground-based facilities.

For these reasons the council has planned the Airborne Program. During the initial phases of the Program the council will work with states and communities in the region on ways of constructing a viable form of permanent organization and financial support.

Educational Planning

To make sure that the courses selected for telecasting would relate effectually to the educational needs of the region, the council wished to obtain wide consultation with school and college personnel in the telecast area. Accordingly the following steps were taken:

(1) The council staff met in November, 1959, with the state superintendents concerned, and on the following day with 39 superintendents of city and county systems in the region, to get their advice on procedures for developing curriculum and on other aspects of the project.

(2) As a result of those meetings, a curriculum policy and planning committee was formed

consisting of 23 representatives of state, county, and city systems.

(3) In January, 1960, 93 college and university representatives from the six-state area met to advise on the higher education aspects of the program. As a result of this conference, a section on higher education was added to the curriculum policy and planning committee.

To insure that the content of the courses recommended by the committee would be in harmony with the curricular requirements of the several states, that the suggestions of appropriate professional educational organizations were brought to bear, and that course content would meet regional needs, panels of subject matter specialists from the several states were called together to work out "ground rules" for the development of each course.

Because the quality of the teacher is in the last analysis the keystone to educational quality, the council wanted to find the best possible teachers for the Airborne courses. Therefore a nation-wide "teacher talent search" was launched. Letters went to all chief state school officers and to 230 selected city and county school administrators, explaining the project to them and asking their help in finding excellent teachers. The staff met with the managers of educational television stations from all over the country to acquaint them with project plans and enlist their cooperation also. This meeting was followed by a conference with the ETV station managers of the six-state region. From the foregoing sources the council obtained kinescopes and taped "auditions" of about 300 teachers from all parts of the nation. A screening panel of 22 midwestern educators experienced in working with instructional television developed a recommended list from these auditions, while staff assembled additional information about these teachers. Final selections were made in accordance with the courses chosen.

The television teachers came together in a workshop at Purdue University in the summer of 1960. Here they outlined the courses, drafted supplementary written materials, and planned for visual aids and production. Actual production and taping of courses is taking place at several centers (chiefly ETV stations) under the general supervision of Learning Resources Institute, contracting agent for Midwest's production.

Engineering and Technical Planning

Westinghouse Electric Corporation is engineerneering the telecasting system to be carried in ing the telecasting system to be carried in the planes. The council has purchased two DC6AB aircraft, one for regularly scheduled flying and one for standby. These are being equipped by Westinghouse and CBS to transmit the courses to the schools. The feasibility of airborne telecasting has already been demonstrated by Westinghouse in a three-year experiment. Recent studies based on this experimentation make it possible for the Midwest Program to telecast over two channels, thus permitting the broadcasting of two courses of instruction at one time.

The Federal Communications Commission has granted limited experimental authorization to use the two channels needed to begin the Program. It is expected that eventually as many as six simultaneous telecasts could be transmitted from one plane.

The transmitting aircraft will fly in a ten-mile circle at an assigned altitude of 23,000 feet near Montpelier, Indiana. Air-to-ground transmission will be on two standard-band, ultra-high-frequency channels. The Program will also experiment with narrow-band transmission, which ultimately could permit a doubling of the number of programs transmitted. Engineering of the narrow-band experiment is being done by CBS Laboratories.

The period of demonstration telecasts (January-May, 1961) will give the schools an opportunity to observe the courses, check the quality of the signals received, and install and check their receiving equipment. When the exact signal area is determined, ETV stations in major cities will be encouraged to pick up the telecast for rebroadcasting to "fringe" areas. They may also record them for local telecasting at hours different from the Airborne schedule.

A technical advisory committee on TV receiving equipment has assisted the council in preparing information for the schools about receiving equipment, its installation, and its cost.

Administration and Participation

The Midwest Council on Airborne Television Instruction has its main office Purdue University. During the initial stages of the program, Purdue and the Purdue Research Foundation are providing the council with legal, fiscal, and physical facilities. The Midwest Council operates as an independent policy-making and management group.

Schools and colleges in the region will participate in the program on a voluntary basis. They may use as many or as few of the courses as they wish and may equip as many or as few classrooms as they wish. Schedules and course descriptions will be furnished to them well in advance of the beginning of telecasting.

To assist the schools in making the best of the telecasts, area committees have been organized. The area committees make possible close liaison between the operation of the program and the communities using it. An area coordinator and a resource institution have been designated to serve each area committee.

Plans for Evaluation

It is the policy of the Midwest Council on Airborne Television Instruction that the educational, technical, economic and administrative-managerial aspects of the program be evaluated and that evaluation shall be conducted during the planning and execution of the program rather than on an *ex post facto* basis at the end of the project phase. Accordingly work is going forward as rapidly as possible to complete an over-all evaluation plan before the actual telecasting begins. In the economic and technical areas evaluation has already been started and will be incorporated into the total plan. Also under way is a history of the project, which will provide a framework and background material.

Planning and operation of the evaluation program will be joint functions of the MPATI staff and the resource institutions, with consultation from specialists from the U. S. Office Education and from testing and evaluating organizations. The U. S. Office of Education has expressed an interest and has offered to assist. In August, 1960, a preliminary committee of six persons, representing the research divisions of three resource institutions and outside consultants, met with the staff to propose general outlines for an over-all evaluation plan and methods of implementation.

Personnel for the evaluation program will be added to the central staff in the early fall of 1960. Evaluation procedures will be set up and administered through the area coordinators. The staff will develop or select instruments for measurement and will assist the schools not only with their part of the general evaluation program but also with such evaluation as individual schools may wish to undertake independently for their own purposes. Concurrently steps will be taken to inform and interest research agencies and investigators throughout the region regarding the possibilities inherent in the program for cooperative or special independent research projects. The work of evaluation will be assisted by consultation from specialists in the resource institutions and other evaluation experts.

Significance of the Midwest Program

If the airborne experiment fulfills its promise of success, it may serve as a pilot project for similar regional programs in other parts of the country. Already inquiries about its courses and methods have come from many parts of the United States and from some foreign countries. The program has important implications for education in underdeveloped parts of the world, where needed and useful education could be carried on by the airborne method without having to wait until levels of literacy could be raised. The midwest region is therefore undertaking an educational venture of great significance for the nation and the world.

Economics Of The Midwest Program

MANY questions have been asked about the cost of the Midwest Program on Airborne Television Instruction. We will discuss here two aspects of the economics of the program: (1) the relative costs of an airborne facility as compared to the costs of a ground-based facility covering the same area; (2) the budget for the experimental phase covering the period from the fall of 1959 through May, 1962.

It should be said at the outset that the Midwest Council believes that, in the immediate future of instructional television generally, the question is not whether ground-based *or* airborne transmission should be used. Rather, the growing importance of television as an instructional medium is such that all possible types of facilities will be required to do the job ahead. In the early stages of planning for this regional program in education, comparative estimates were obtained for airborne and ground-based facilities. Since these estimates indicate that the airborne method would be less expensive for telecasting to a region of this size, airborne transmission appeared sufficiently promising to warrant demonstration through a large-scale project. For this reason the council decided to pursue the airborne project.

The program has now progressed far enough that other questions about its costs can be answered with a reasonable degree of assurance. Although there are of course still some cost figures that are not firm, and although all cost matters are necessarily subject to continuing study, the council can now speak with con-

Four-engine aircraft to be used in the program, with its 24-ft. sending antenna.

Sample lesson of elementary science is monitored in studios at Purdue.

fidence about the various aspects of the total costs.

Although the production and administrative costs for airborne and for ground-based transmission would be approximately the same, capital outlay and operating costs show a substantial difference. This difference is apparent in Table A, comparing costs for facilities needed to reach an equivalent territorial area.

In each case computations have been made by projecting the Midwest Program beyond the project phase, when only two programs will be transmitted simultaneously. Assuming that the maximum potential of six programs would be transmitted and that one fully equipped standby aircraft would be provided to serve every three aircraft used as airborne facilities, the costs of a single airborne facility would then be increased by one-third.

The ground-based facility assumes six 1-kilowatt transmitters, a 1,000 foot tower, and a single antenna onto which all six programs would be multiplexed. Additional micowave equipment, over and above the main studio-to-transmitter links, would be needed to tie these stations together. The cost of a six-channel system is estimated at a minimum of approximately $1,500 per mile and may be substantially more. To tie together 14 stations, each with a service radius of approximately 50 miles, would require 13 subsidiary links, each approximately 100 miles long. Allowing for off-the-air pickup and reducing the mileage to one-half, the costs for microwave equipment may be estimated as:

13 links x 100 miles x $1,500 per mile x ½ = $975.000

Thus the total cost for ground-based facilities equivalent to one airborne facility is approximately $9,254,000 for UHF facilities and $975,000 for microwave facilities, totaling $10,229,000.

Interest Charges on Capital Costs

Assuming that it would be necessary to borrow money to meet capital costs, there would be additional yearly charges for interest. At 6 per cent per year simple interest, these would amount to 6% of $3,463,000 or $207,800 per year for airborne facility; 6% of $10,229,000 or $613,700 per year for equivalent ground-based facilities.

Amortization of Capital Costs

Assuming that the entire capital costs should be amortized over a period of years, the annual charges for interest at 6 per cent and reduction of principal would be, if amortized over a 5-year period, $806,000 per year for airborne facility or $2,381,300 per year for equivalent ground-based facilities.

If amortized over 10 years, this would be $465,400 per year for airborne facility or $1,374,800 per year for equivalent ground-based facilities.

Operating Costs

The operating cost estimates also assume six programs are being transmitted simultaneously for six hours a day and four days a week. Certain

Table A.

CAPITAL COSTS	AIRBORNE FACILITY	GROUND-BASED FACILITY
Aircraft or Tower	$1,000,000	$ 125,000
Aircraft Auxiliary Power, etc.	230,000	—
Antenna and Accessories	100,000	50,000
Transmission Line	2,000	32,000
Transmitters (6)	750,000	160,000
Input and Monitoring Equipment	130,000	120,000
Test Equipment	5,000	4,000
Building and Land	—	50,000
Installation	200,000	30,000
Studio to Transmitter Links	180,000	90,000
Total for one facility	$2,597,000	$ 661,000
Total for 1 1/3 Airborne or 14 ground facilities	$3,463,000	$9,254,000

Table B.

	EACH AIRBORNE FACILITY	EACH GROUND-BASED FACILITY
Transmitter Operators	$20,000/yr.*	$ 15,000
Maintenance and Supervisory Personnel	15,000	15,000
Tubes and Maintenance	40,000	20,000
Transmitter Power	30,000	3,000
Building and Tower Lights	—	1,000
Building Maintenance	—	600
Tower Maintenance	—	1,000
Aircraft Operation		
Oil, Gas, Crews, etc.	440,000	—
Maintenance, Overhaul, Engine Replacement, etc.	168,000*	—
Total	$713,000	$ 55,600
* Add 1/3 of the items for spare aircraft	63,000	—
Total for 1 1/3 airborne or 14 ground-based facilities	$776,000	$778,400

Table C.

Summary of Operating and Capital Costs

	AIRBORNE FACILITY	EQUIVALENT GROUND-BASED FACILITIES
a) Capital Cost	$3,463,000	$10,229,000
b) Annual cost without amortization		
Operating	$ 776,000/yr.	$ 809,000
Interest @ 6%	207,800	613,700
Total	$ 983,800	$1,422,700
c) Annual cost with amortization in 5-year period		
Operating	$ 776,000	$ 809,000
Amortization: principal + interest	806,200	2,381,300
Total	$1,582,200	$3,190,300

Budget for Midwest Program On Airborne Television Instruction Covering the Period Fall, 1959, Through May, 1962

The budget of the Midwest Program has been broken down into major categories, with the costs for each category indicated on the same line.

1. Aircraft and Transmitting Equipment	
Design, installation and operation of transmitting equipment	$2,100,000
Design, installation and operation of narrowband experimental equipment	400,000
Operation, maintenance, handling, and hangaring of aircraft	1,150,000
Engineering planning and consulting services	200,000
Total	$3,850,000
2. Preparation of 28 Courses of Instruction	
Planning and producing or purching 28 courses	$1,820,000
Purchase of magnetic tape	340,000
Operation of tape processing center to receive, duplicate, and prepare tapes for placing on plane	250,000
Total	$2,410,000
3. Professional and technical assistance to schools and colleges	
Support of Resource Institutions, Area Coordinators, and Regional Advisory Commission	$330,000
Conferences and teacher workshops	140,000
Total	$470,000
4. Public Information	
Salaries, wages, social security, travel, consultants, conferences, and clerical services	$ 60,000
MPATI brochure, quarterly newsletter, and other publications and displays	50,000
Total	$110,000
5. Program Evaluation	80,000
6. Physical facilities (Rent, utilities, telephone and telegraph, office supplies, postage and mailing, publications, printing and duplicating, and other office overhead)	125,000
7. Administrative Costs (Salaries, wages, travel)	380,000
8. Consultants and Professional Services	110,000
9. Special Conferences and Workshops	25,000
10. Contingency	190,000
TOTAL PROJECT COSTS*	$7,750,000

* The purchase price of the aircraft was not included in the above data. Financing of the purchase of the aircraft was handled outside the budget and their disposition at the end of the project will also be handled as a non-budget item.

of the aircraft operating expenses should be multiplied by 1 1/3 to allow for the use of one spare aircraft for each three operational aircraft. Certain of the operating expenses, however, should not be multiplied by the 1 1/3 factor, since the cost would be incurred only in whichever single aircraft was operating. The operating cost summaries are shown in Table B.

In addition, a 26-station microwave relay system, providing 650 miles of microwave circuit, would be required to link the 14 broadcasting stations comprising the ground-based facilities. The total annual operating cost of this 26-station microwave relay system is estimated as follows:

Three operators	$22,500 yr.
Travel—one circuit per week average of 650 miles/week x $0.10/mile x 50 weeks=	3,250 yr.
Maintenance, tubes, power, etc. @ $200/yr. per station	5,200
	$30,950 yr.

The comparable total for ground-based facilities is thus $809,390 a year ($778,440 plus $30,950).

The figures shown in Table C reveal a threefold difference in capital costs in favor of an airborne system as well as a slight edge for airborne television with respect to operating costs.

It will be a function of the economic evaluation of the Midwest Airborne project to provide sufficient data to detail fully the significant differences in cost between airborne educational television and other methods of instruction.

Mrs. Geraldine Workman of Kansas City, Mo., one of the first selected to produce courses for MPATI. She will teach world history and geography.

Math, Music, Art, Science, History . . .

On January 30, 1961, the Midwest Program on Airborne Television Instruction will begin its demonstration period of telecasts. In this initial phase of the experiment, 14 courses will be transmitted from a specially equipped airplane on a regular weekly schedule until May 25, 1961.

Of the 14 courses to be offered, eight are on the elementary level, four are designed for high school use and two will be at the college level.

The following will provide descriptions of the courses to be offered, also brief sketches of the instructors.

WONDERFUL WORLD OF NUMBERS

Arithmetic for Grade Six (20 minutes telecasts four days a week)

Emphasizing and understanding of mathematics in developing mastery of fundamental skills, the telecast portion of the upper elementary arithmetic lessons will attempt to introduce structure of number whenever possible. The modern point of view penetrating the field of mathematics will be presented and the language used will be aimed at better preparing the pupils for junior high school.

Supplementing the classroom work in upper elementary arithmetic, this course may be used for accelerated fifth graders and some seventh graders as well as sixth graders.

The course will attempt to stimulate the students to see patterns in numbers and explore their relationships.

Instructor: Marlene Beigel

Miss Beigel is a magna cum laude and Phi Beta Kappa graduate of the University of Cincinnati where she received the A.B., B.E., and M. Ed. She has been teaching seventh grade Cincinnati Public Schools for the past two years.

TIME FOR ART

Art for Lower Elementary Grades 1-3 (20 minute telecasts two days a week)

ADVENTURES IN ART

Art for Upper Elementary Grades 4-6 (20 minute telecasts two days a week)

To supplement and enrich the art education program now being offered in the school is the purpose of these two coordinated courses.

These telecasts will assist the classroom teacher to inspire in the children a confidence in self-expression through creative art activities. Other of the presentations will seek to develop an understanding of the arts through study of painting, sculpture, architecture, the crafts and industrial design. The development of some technical skills will be encouraged without resorting to copying, imitation or such techniques as might hinder creative expression.

Instructor: Elizabeth O. Dabbs

For 20 years, Mrs. Dabbs has been a teacher and supervisor of art. She has also conducted workshops in art education for more than 18,000 teachers in four states and on some 20 college and university campuses. During the past two years, she has presented programs in art by television in the Fort Wayne and Cincinnati areas. Mrs. Dabbs studied at the John Herron Art School, has a B.A. degree from Sioux Falls College and an M.S. from Indiana University.

BONJOUR LES ENFANTS

Conversational French for Elementary Grades (20 minute telecasts four days a week)

Bonjour les Enfants will present the most commonly used structural patterns of elementary conversational French to children in grades three through six. This series will also strive to create and sustain an interest in France.

An aural-oral approach will be used with ample time given to pattern drills and frequent reviews of materials already covered. Basic patterns of French conversation will be developed in situations closely related to the children's everyday actvities.

Instructor: Zelik Zeff

A native of France, Mr. Zeff has been teaching a course in Conversational French for elementary school children in Detroit since September, 1959. He received his A.B. degree from Wayne State University, and traveled extensively in Europe before making a career in teaching.

SINGING, LISTENING, DOING

Music for Lower Elementary Grades 1-3 (20 minute telecasts two days a week)

MUSIC FOR YOU

Music for Upper Elementary Grades 4-6 (20 minute telecasts two days a week)

The aim of these courses is to assist the school in providing experiences which will help the

Marlene Beigel, arithmetic teacher in the airborne TV program, works on course outline for her airborne TV lessons.

Benito Lueras will teach beginning Spanish to the school children.

Science teacher John Burns will demonstrate weight of the atmosphere.

child develop understanding, skill, and appreciation in music.

Program content will center around six areas of basic musical activity. The six areas to be covered are: singing, listening, rhythm, playing classroom instruments, creating, and reading. These telecasts will stress the fundamental elements of music: melody, rhythm, tone quality, tempo, dynamics, and form.

The telecasts will also attempt to assist the classroom teacher in developing a favorable environment for creativity through asking children to notice, seek out, choose, decide, compare, and contrast many musical experiences. The growth of sound musical values will be accelerated, it is hoped, by means of this process.

Instructor: Dolores D. Dudley

During the past three years, Mrs. Dudley has been teaching music by television with the Washington County Closed Circuit Television Project of Hagerstown, Maryland. She also served as Elementary Music Supervisor at Tewksbury Public Schools in Tewksbury, Massachusetts. Majoring in voice and piano, Mrs. Dudley received an A.B. degree from River College and later obtained a B.S. in Music Education from Lowell State Teachers College.

THE SCIENCE CORNER

Elementary Science for Grades 3 and 4 (20 minutes telecasts four days a week)

The Science Corner is concerned with the everyday science surrounding a child. Shadows fall, wheels are round, birds can fly and children want to know why. It is the aim of this course to help the classroom teacher to capture this curiosity, to stimulate it and to give each child the opportunity to explore the wonders he sees around him.

To make full use of these telecasts the only materials needed will be those normally found in every classroom and in the children's home.

Instructor: Barbara Yanowski

Miss Yanowski has been teaching elementary science by television for four years in New York City. She became interested in radio and television while studying for her B.A. at Fordham University. While there she was active in college theatre productions and also served as dramatics director of radio station WFVW. She has an M.A. from the University of Michigan.

EXPLORING WITH SCIENCE

Elementary Science for Grades 5 and 6 (20 minute telecasts four days a week)

Designed primarily for use at the fifth and sixth grade levels, this course aims at developing a scientific attitude on the part of the student. Basic information units will cover such fields as weather, machines, geology, fire, animals, and conservation. In bringing into play a fund of scientific facts concerned with the everyday world about them, it is intended that the children will gain a better understanding of their environment and how science can be used to interpret it.

MPATI Broadcast Schedule For Demonstration Period (January—May 1961)

EST	CST	Monday		Tuesday		Wednesday		Thursday	
		72*	76*	72	76	72	76	72	76
9:25	8:25								
9:30	8:30	College Chemistry	H. S. Biology	College Chemistry	H. S. Biology	College Chemistry	H. S. Biology	College Chemistry	Science Course to be Announced
10:00	9:00								
10:05	9:05	Arith. Grade 6	Science Grades 3-4	Arith. Grade 6	Science Grades 3-4	Arith. Grade 6	Science Grades 3-4	Arith. Grade 6	Science Grades 3-4
10:25	9:25								
10:30	9:30	H. S. American History	H. S. American Government	H. S. American History	H. S. American Government	H. S. American History	H. S. American Government	H. S. American History	H. S. American Government
11:00	10:00								
11:05	10:05	Science Grades 5-6	Art Grades 4-6	Science Grades 5-6	Art Grades 4-6	Science Grades 5-6	Art Grades 1-3	Science Grades 5-6	Art Grades 1-3
11:25	10:25								
11:30	10:30	French Grades 3-6	Music Grades 1-3	French Grades 3-6	Music Grades 1-3	French Grades 3-6	Music Grades 4-6	French Grades 3-6	Music Grades 4-6
11:50	10:50								
11:55	10:55	College Math.	World History Geography	College Math.	World History Geography	College Math.	World History Geography	College Math.	World History Geography
12:25	11:25								

* Telecasts will be broadcast over two channels (72 and 76) on four days each week.

The arrangement of the telecasts into a series of subject units provides a flexible control over the course curriculum. The classroom teacher may, building upon selected units, present a course which will fit the particular teaching situation.

Instructor: John W. Burns

With some nine years of teaching experience, Mr. Burns has for the past two years taught science by television with the Detroit educational TV project. He received his B.S. and masters degree at Wayne State University where his interest in audio-visual teaching aids was expressed in his graduate thesis on this subject.

ONE NATION INDIVISIBLE

American Government and Civics (30 minute telecasts four days a week)

One Nation Indivisible is a two-semester high school level course on the functioning of the government of the United States at its three operational levels: national, state, and local.

With the Constitution of the United States as the focal point, this course will develop the vital political processes of a dynamic democracy, portray some of the personalities that have made our democracy live, and underscore the national conflicts which are the bloodstream of our governmental system.

Instructor: Myles M. Platt

Mr. Platt has been a classroom teacher for 10 years, having taught elementary, high school, and college students. As a television instructor he has presented some 250 lessons in World History over Channel 56 in Detroit. He received Ph.B. degree from the University of Detroit, and M.A. from Wayne University, and is currently completing his Ph.D. dissertation for the University of Michigan.

OUR ADVENTURE IN FREEDOM

American History for Senior High School (30 minute telecasts four days a week)

To create within the student a sense of his continuity with past generations of Americans will be one of the primary aims of this television course.

Starting with the background of the opening of the Western Hemisphere to European civilization, the lessons will be grouped into nine units tracing the origins of the American Republic through to the present.

Organization of the course material is basically chronological. Political and economic movements and motives will constitute the greater part of the year's study, however, considerable attention will also be paid to American cultural and social history.

There will be no attempt to portray the American past as always ideal nor American leadership always without sin, but neither will any conscious debunking characterize this series of telecasts.

Instructor: John E. Dickey

During some 25 years of experience, Mr. Dickey has taught on the elementary, secondary and college levels. He has also been a television teacher of American History for the Kentuckiana Council of Educational Television. Mr. Dickey received his A.B. and M.A. from Western Kentucky State College and is now doing graduate study toward a Ph.D. at the University of Kentucky. During World War II he served as an officer with the U.S. Navy.

OUR CHANGING WORLD

World History and Geography (30 minute telecasts four days a week)

This series of telecasts will present a chronological development of world history up to the industrial revolution, with emphasis on the rise of western civilization; and a combination of chronological and topical treatment from then until the present. Material will be presented with an awareness of geographic setting to demonstrate that much of what man has done in the past has depended upon where he has lived.

Instructor: Geraldine Workman

A high school teacher of history for more than 15 years, Mrs. Workman has for the past two years taught daily lessons in both World History and American History by television. She has a B.S. in Education from Central Missouri State College and has done graduate work at the University of Colorado and at Kansas City University.

BIOLOGY — GRADE NINE

A Television Course Produced by the Cincinnati Public Schools (30 minute telecasts four days a week)

This series of telecasts, when used as a supplement to regular laboratory periods and classroom discussions, is designed to present a basic understanding of Biology. The telecasts will be given in unit groupings corresponding to the major areas of study covered by the course. Some subject units are: The World of Living Things, Cell Life, The Animal Kingdom, Human Biology, Transmitting Life to New Generations, The Plant Kingdom, and Man and Nature.

Instructor: Stephen B. Smalley

Mr. Smalley has been a teacher for 25 years in the Cincinnati Public School system. He is now starting his third year as a television teacher of Biology. He is also Park Naturalist for Hamilton County, Ohio, and is a frequent lecturer before garden clubs and civic and religious groups. Mr. Smalley attended the University of Cincinnati and the Lane Theological Seminary, graduating with the degree of B.R.E. He has since done graduate study at the University of Cincinnati.

MODERN ALGEBRA

Continental Classroom College Level Television Film (30 minute telecasts four days a week)

Modern Algebra will include the following: a review and restatement of elementary Algebra, vectors and lines, inner products the complex plane, lines, planes and equations, and matrix algebra.

Instructor: Dr. John L. Kelley

Professor Kelley is professor of mathematics and former chairman of the Department of Mathematics at the University of California (Berkeley). He has also taught at Notre Dame and Chicago, and was a Fulbright Research Professor at Cambridge University. Dr.. Kelley is the author of *Introduction to Modern Algebra*, written especially for his Continental Classroom course, as well as several other books and numerous research papers.

Miss Judith Waller, member of the MPATI staff, explains to two of the TV teachers (Geraldine Workman and Loretta Doyle) how their lessons will be recorded on video tape.

Teaching Machines: A Primer

by Fred M. Newmann

Many educators are hearing the words "teaching machines" for the first time and they wonder what it's all about. Mr. Newmann's article is the kind of fundamental 'first step' learning that a person might be able to dig out for himself after hours of searching, inquiring and studying. Here is matter for greater understanding about teaching machines.–Ed.

FOR many school teachers a casual reference to "teaching machines" will elicit a barrage of scornful if not angry remarks:

"What is this world of automation coming to?"

"When you substitute machines for human beings in the school, what kind of an educated robot will you produce?"

"If taught by machine, how can children learn the personal, emotive, attitudinal aspects of life? Besides, people can teach better than machines anyway; personal contact and dialog will always provide the most effective learning experience."

In spite of the doubts raised in these statements, the last decade has witnessed the successful development and use of teaching machines. They have been proven experimentally to teach a variety of subjects more efficiently than conventional classroom methods. Extensive research continues at present, but not mainly to determine the effectiveness of the teaching machine–this has already been established. Instead, current research is directed toward making even more efficient devices, the use of which in public schools will radically alter the nature of instruction. Here is a revolution in American education, most conspicuous and refreshing in a field where change has been so rare.

Of obvious significance to teachers, this topic is here discussed in an effort to explain the nature of the teaching machine, the principles on which it operates, its advantages and limitations. Several articles reporting current research are available, and the reader would wisely consult the following sources of bibliography:

Galanter, Eugene, editor. *Automatic Teaching: The State of the Art* (New York: John Wiley & Sons, 1959).

Porter, Douglas "A Critical Review of a Portion of the Literature on Teaching Devices" *Harvard Educational Review*, vol. 27, no. 2 pp. 126-47 (1957).

Rigney, Bryan and Fry, "Teaching Machines: An Annotated Bibliography *Audio Visual Communication Review* vol. 8, no. 2 (Washington, 1960).

(Note also *Teaching Machines and Programmed Learning*, edited by A. A. Lunsdaine and Robert Glaser, published by DAVI in October, 1960–after this article was written. This seems to be the most comprehensive volume published to date.)

Operational Features

The label "teaching machine" is often attached to a variety of items, including electrically scored tests, accelerated reading machines, or anything that is mechanical and used in instruction. Such a broad definition is no longer useful, as the teaching machine has recently acquired a specific meaning. Defined functionally, the teaching machine is a device which (a) presents a small item of academic content to a single student, (b) elicits a student response to the item, (c) informs the student as to whether or not his response is correct, (d) proceeds to present additional item for either new academic learning or for correcting previous wrong responses.

Devices which perform these operations have been most recently developed by B. F. Skinner, the Harvard psychologist whose machines have been used in research for about five years. Henceforth I equate "teaching machine" with the Skinnerian type as defined above.[1]

The machine itself need not be complicated. It could be designed from a cardboard box and should provide the following: a window through which the student reads the subject matter item; a mechanism that will feed successive items to the window (for example, a disc or roll); a space on which the student will record his responses; an adjacent window and mechanism which reveals the correct response to each item after the student has supplied his own answer. The device can be designed for manual operation, although technology has devised electronic machines economically feasible.

See Table I for an example.

Notice in Table I that the spelling of a word is taught in specific steps or lessons and that

[1]Skinner's machine was not the first. In the early 1920's Sidney L. Pressey developed a teaching device based on what are now called Skinnerian principles of psychology. At that time, however, psychology of learning had not matured enough to accept Pressey's thesis. Pressey differed from Skinner on only one significant point. The former advocated the presentation of multiple responses from which the student would choose one. Skinner, on the other hand, leads the student to construct his own response–to recall, not just recognize the correct answer.

Table I

A set of frames designed to teach a third or fourth grade pupil to spell the word *manufacture*.

1. MANUFACTURE means to make or build. *Chair factories manufacture* chairs. Copy the word here.
   — — — — — — — — — — —
2. Part of the word is like part of the word *factory*. Both parts come from an old word meaning *make* or *build*.
   MANU — — — — URE
3. Part of the word is like part of the word *manual*. Both parts come from an old word meaning *hand*. Many things used to be made by hand.
   — — — — FACTURE
4. The same letter goes in both spaces.
   M — NUF — CTURE
5. The same letter goes in both spaces.
   MAN — FACT — RE
6. Chair factories _____ chairs.

the student is actively participating in the learning experience. This is not rote memorization. The student learns one frame at a time and cannot proceed until the previous one is mastered.

Another example demonstrates instruction in high school science. See Table II.

It can be seen in Table II that the frames become progressively more difficult as new concepts are introduced, but the new concepts cannot be mastered until the former ones are learned. In this method of careful programming the students build their understandings step by step.

Learning Theory

To justify this type of teaching method one must subscribe to a few definite principles of psychology, a summary of which appears below.

1. Learning consists in making various responses in the presence of given stimuli. To learn a response, the pupil must *make* it when the stimuli are present. He must be active to learn, i.e. he must actually respond in a behavioral fashion. Here is where teaching machines differ from other media of instruction and communication which are only stimulus devices; for example, models, motion pictures, opaque projections, phonograph sounds, tape recordings, etc. Douglas Porter explains that such devices—

> "present a student with information about how to make a given response, or about when it is appropriate to make the response. They do not provide a setting for the practice of responses under specifiable and controlled circumstances. Thus it may be said that stimulus devices provide learning content without any assurance that a learning process will be carried out.[1]

[1]Porter, "A Critical Review . . . Teachings Devices" *Harvard Educational Review* vol. 27, no. 2 (1957) p. 129.

In contrast, other devices give practice in performing responses but provide no stimulus information about the circumstances under which behavior is appropriate. Examples of such response-producing devices are the typewriter and the abacus. But the teaching machine is a stimulus-response device which induces learning because it incorporates the complete learning process under controlled conditions. The machine might be more properly called a "learning machine," for it makes the student behave—the *learner*, not the teacher, becomes the focus of activity. Because pupils in the common classroom are not often involved actively in a lesson, we find, to our distress, much teaching but relatively little *learning* taking place.

2. For learning to be effective the stimuli presented must appear in minute steps, following a sequence appropriate to the desired final behavioral. In experiments with lower organisms it has been shown that behavior can be taught most efficiently when it is broken down into successive behavioral units. One reinforces each specific movement that leads toward the desired behavior, be it a movement of the rat's eye, head, or leg.

Skinner applies this principle to verbal behavior as well. For him "understanding" a subject simply means that a student can respond correctly to a large number of questions about it. The student is able to do this only after he has learned the subject through a detailed and logical progression of stimuli which elicit the correct responses. On this basis, the series of stimuli (called the "program") must be constructed with meticulous care.

3. Learning is achieved most efficiently when responses are immediately reinforced. In the case of the teaching machine, reinforcement is provided by the information of the student that his response is "right." (Some machines have given candy to the students, but this proved to have diminishing returns as effective reinforcement.) By merely informing the student that his answer is "correct" you strengthen the behavior preceding the reinforcement. That is, it becomes more likely that in the future the pupil, when confronted with the same stimuli, will respond in the desired manner.

This constant feedback is what makes the pupil learn. He behaviorally responds to clearly organized, specific items, and he is told *immediately* whether his behavior is right or wrong. The immediacy of reinforcement cements the learning bond. In the normal classroom situation, the teacher cannot provide immediate reinforcement to each of 30 pupils, but with the teaching machine, such feedback becomes real. Furthermore, it is provided at a rate determined by the capacities of the individual pupil. In this respect the teaching machine is similar to a private tutor.

Pro and Con

A teaching machine has no advantages whatsoever to someone who refuses to accept the learning theory on which the device is based. As-

suming for the moment that Skinnerian theory is justified, let us be the first to realize, as does Skinner, that the teaching machine is not designed to replace the teacher. On the contrary, its purpose is to make the teacher more efficient. With regard to instruction in items of verbal behavior the teaching machine has these advantages:

1. It allows the individual to work according to his own capacity. A bright student is not detained by the slower members of his class, nor is the retarded student unjustly accelerated. The machine has the attributes of a tutor with infinite patience.

2. The teaching machine effects more *efficient* instruction. Most of the research shows that learning by machine requires less time per pupil and results in longer retention than the conventional classroom techniques.[1]

3. It relieves the classroom teacher of a function which is better performed by another agent. This allows the teacher to devote more time to those aspects of education which he is more qualified and better able to master: for example, class discussion, laboratory work, creative writing —any objectives of education which are not directed toward specific verbal behaviors.

The teaching machine is not devoid of limitations, and here are two major ones:

1. The cost of programming the academic material is astronomic, because it demands so much tme and study on the part of specialists.

2. If one of the objectives of American education is "socialization"—and socialization includes more than learned verbal behaviors—the machine is limited in the amount of socialization it can accomplish. Teaching of certain attitudes, values, plus a style of creating and responding spontaneously to unique situations—these and other intangibles cannot be taught by machines at present. Yet the only reason for this is that we have not invented methods by which to measure such abstractions. Skinner would argue, however, that no teaching objective is valid unless it can be measured; that when we ask students to think or analyze complex cognitive items, we, as teachers, are only presenting confusing situations out of which the good students extract meaning. Good teaching should strive for clarity. It must be noted that Skinner's psychological tenets govern his position, and most stimulus-response theorists defame the validity of anything dealing with behavior that cannot be measured.

Nevertheless, the use of the teaching machine carried to extreme has disturbing sociological implications. There would be no need for grades, classes or school activities, and the school would no longer act as a socialization medium. To be sure, Skinner does not advocate such a course, but this is a potential outcome which magnifies the importance of recognizing the facts that (a) education is a many-faceted endeavor; and (b) teaching machines can accomplish only one aspect of the over-all process: instruction in verbal behavior.

[1]See one of Porter's studies reported in "Teaching Machines," *Harvard Graduate School of Education Bulletin*, vol. 3, no. 1 (1958)

Conclusion

Research confirms the effectiveness of the teaching machine as applied to verbal behavior. In this role it has demonstrated outstanding advantages and should be used wisely. Teachers need not express alarm at the new device if they understand its proper function. This is the issue involving all technology . . . if we do not pervert its appropriate use as a *tool* (not an end in it-

Table II

Part of a program in high school physics. The machine presents one item at a time. The student completes the item and then uncovers the corresponding word or phrase shown at the right.

Sentence to be Completed	*Correct Response*
1. The important parts of a flashlight are the battery and the bulb. When we "turn on" a flashlight, we close a switch which connects the battery with the _____.	bulb
2. When we turn on a flashlight, an electric current flows through the fine wire in the _____ and causes it to grow hot.	bulb
3. When the hot wire glows brightly we say that it gives or sends out heat and _____.	light
4. The fine wire in the bulb is called a filament. The bulb "lights up" when the filament is heated by the passage of a(n) _____ current.	electric
5. When a weak battery produces little current, th efine wire, or _____ does not get very hot.	filament
6. A filament which is *less* hot sends out or gives off _____ light.	less
7. "Emit" means "send out." The amount of light sent out or "emitted" by a filament depends on how _____ the filament is.	hot
8. The higher the temperature of the filament the _____ the light emitted by it.	brighter stronger
9. If a flashlight battery is weak, the _____ in the bulb may still glow, but with only a dull red color.	filament
10. The light from a very hot filament is colored yellow or white. The light from a filament which is not very hot is colored _____.[1]	red

[1]These programs are taken from Skinner's article, *Teaching Machines Science* vol. 128, no. 3330 Oct. 24, 1958.

FILM EVALUATIONS

by L. C. Larson and Carolyn Guss

Paris: The City And The People

(Coronet Films, Coronet Building, Chicago 1, Illinois) 11 minutes, 16mm, sd, color and black and white, 1960. $110 and $60.

Description

A visiting American is shown the famous and beautiful city of Paris by a native Parisian. Their interchange of conversation provides the visual framework for the tour and gives the viewer pertinent historical facts concerning the city and its people.

The tour begins at the Notre Dame Cathedral, built on an island in the middle of the famous Seine River, when Paris began as a Roman town more than 2000 years ago. Since that time, the city has spread far beyond the river on either side. We are shown all around this vast expanse from the top of the Cathedral.

The Arc de Triomphe with its Eternal Flame that honors the unknown soldier of France, Napoleon's Tomb, and the National Assembly Buildings are next on the tour. France is a republic and the Senate meets in the Luxemburg Palace which was the former home of the kings of France.

Paris is a city of commerce and men come from all over the world to trade. The Eiffel Tower which was built in 1889 for an exposition of Trade and Commerce symbolizes this fact. Centered in Paris are the women's clothing industry with many famous houses of clothing as well as industries to design and make hats, fur pieces, jewelry, cosmetics and perfumes to accentuate the clothing.

Paris is also a center of culture. The Louvre or Palace of Fine Arts brings students from all over the world to study its collection of art. There are many theatres in Paris and the Paris Opera is the home of music and ballet.

The tour then visits the book stalls along the Seine where students from the nearby University of Paris sometimes go to purchase books. The University is one of the oldest in Europe and specializes in courses in the arts and sciences and engineering. The narration conjectures that perhaps someday one of the engineering students will design a piece of equipment for use in one of the heavy industries which are known for the manufacture of machinery, railway equipment and chemicals.

Paris is also a transportation center, particularly for railroads. The boulevards, bridges, as well as the Seine itself, all are a part of the national highway system of France. Some people live on barges on the Seine. These barges bring products to market.

The Parisian then takes the visiting American to a produce market and a flower market. Since beauty is as important to the French as food, Madelaine and her friend purchase flowers. Most Parisians go home from work on buses or on the metro (the French subway). Madelaine goes to her apartment by subway and the tourist is shown how Parisians live.

The Parisian g u i d e assures the American that they have not seen all there is to see in Paris but maybe next time he can show the tourist more of the beautiful city of Paris.

Appraisal

This film has been used with a fifth grade social studies class as well as a high school French class and rated as excellent by both instructors. The material is modern and is presented in such a manner that it is beneficial for students from the fourth grade through the adult level.

A wide variety of activity was covered and the exterior of many famous buildings in Paris was shown. The film gives an excellent overview of the development of the city from an island fortress to the modern city it is today. The amiable voice of the French narrator adds pleasure and atmosphere to this delightful film.

—Helen Dzur

From Coronet's new release on romantic Paris.

Black Widow Spider

(Ken Middleham Productions, P. O. Box 1065, Riverside, California) 22 minutes, 16mm, sound, color, 1960. $120. Teacher's guide available.

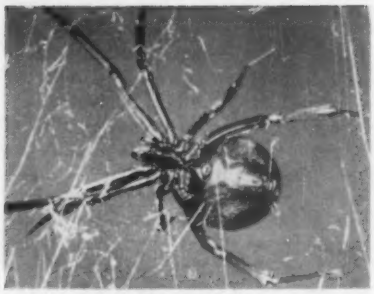
Description

Using highly selective close-up photography and attention to minute details, *Black Widow Spider* explores the seldom seen world of this deadly arachnoid and its tiny but most efficient natural enemy the *Pseudogaurax signata fly.* The life cycles of these animals are studied in detail as is the spider's body structure, reproductive habits, habitats and its beneficial and harmful relationship to man.

The female black widow spider has a venom ten times more powerful than the rattlesnake, but its coal black body highlighted by the telltale red hour glass marking on the lower side of its abdomen is easily spotted since it usually hangs upside down on its web. The spider is found on five continents and its potential home exists wherever there is a dark corner or an untidy accumulation of trash. Clean-up time therefore calls for alertness to avoid its dangerous bite. The danger increases during warm weather when the spider's rate of reproduction increases.

The spider's irregular web is observed as it is used to catch a cockroach which is killed by the spider's hollow fangs and then bound into the web. An extreme close-up pictures the fangs which are one-fifth of an inch long and connected to extremely large poison sacs.

The spider's silk compared by cinephotomicrography to a human hair is



The black widow spider and its poison fangs, as shown in the film.

seen to be many times smaller, but still this silk has 12 times the tensile strength of steel. These properties make it useful for cross hairs in optical instruments. A spider is shown spinning silk onto a spindle, so it may later be used in optical instruments.

A male spider is smaller than the female and attracts her attention by vibrating the web. Following fertilization the eggs develop in the female for a short period until they are ready to be laid. From 100 to 1000 eggs may be laid at one time and laying may occur as often as twice a month in warm weather. The eggs are covered with a fluid which evaporates shortly after the female has covered them with a thick protective sac. Close-ups of the egg clusters before and after evaporation of fluid are seen.

Then the development of a single egg is followed in an extreme close-up as the young spider comes to its surface where it rests in a waxlike image till, through progressive molting, it emerges from the egg and with others chews a hole in the protective egg sac. Until the third molt, males and females are identical. The female molts six or seven times to adulthood and this may take several months to a year.

The black widow's enemies are shown as the preying mantis, mud-dauber wasp and the alligator lizard. The most efficient however is the *Pseudogaurax signata fly*. The tiny female fly lays her eggs on the protective egg case and the maggots bore into the case and eat all the spider eggs, then pupate for ten days. Hatching is accomplished by the fly inflating a soft membrane in the pupa case head until it breaks then it makes its way through the spider-egg-case wall. All these changes are followed by extensive use of extreme close-up photography.

In closing, the spider's tremendous reproductive capacity is cited as more than enough to repulse her enemies.

Appraisal

The exceptionally excellent technical qualities of this film's use of extreme close-up photography of structures and specimens so small as to be nearly invisible to the naked eye might be enough to recommend *Black Widow Spider* as a means of presenting the unobservable. However, skillful content development, attention to significant details while eliminating less important ones, and debunking of myths about this spider place this film in a position offering those qualities most sought in educational motion pictures.

High school and college classes studying zoology will find in this film an excellent vehicle to observe the inter-relationship between two animals as their life cycles interact. The opportunity a film can provide to observe a single animal in details of its life is clearly evidenced in this remarkable production that is commendable throughout. The singular exception is its failure to use an overprint title for the unfamiliar name of the *Pseudogaurax signata* and this is not a major fault.

—Richard Gilkey

Germany Today

(Ernest Kleinberg Films; 3890 Edgewater Drive, Pasadena, California.) 22 minutes, 16mm sound, color, no date. $220. Teacher's guide available.

Description

The film *Germany Today* affords the viewer a cogent glimpse of West Germany's impressive post-war revival and reconstruction where all—women, children and old men as well—must do what they can to speed her resuscitation.

Indeed, there are four Germanys shown with the opening sequence surveying the highly developed and industrialized Rhine-Ruhr areas which once again have become the economic and industrial dynamos of the new, reborn Germany. Here abound the great steel and iron mills which, rebuilt largely with Marshall Plan aid, are pouring out their steel for power plants, oil refineries, heavy machinery, capital and consumer goods. Here the rich coal fields of the Ruhr valley with their estimated supply of 40 billion tons and the lengthy coal trains snaking their way into France and Luxembourg. Here, too, the great fleets carrying finished goods down the Rhine to Antwerp and the other parts of the low countries. In short, Germany once again is highly competitive in the world markets and business is good and the markets stable.

The farmers share in this prosperity, and the second sequence underscores the new interdependence of agriculture and industry. However farming is still largely a family business. Mechanization is slow and costly and the average farm is apt to be under 17 acres—more than likely five acres or less—because traditionally the land is divided and passed down from generation to generation through the male heirs. Here in the rural villages tradition still holds sway in the commodity markets and in the bargaining in the cattle markets even though the traditional garb is fast vanishing. In the Bavarian Farm Cooperatives, however, mechanization is well ensconced and they are bustling, prosperous concerns contributing their share to the burgeoning affluence of the new Germany.

The third Germany, the cultural one, is portrayed in prestigious and illustrious Gottengen University, one of the oldest, most charming and crowded in all Germany. Indeed, standing room only is the order of the day in its classrooms, and living quarters are at a premium with some students living in the clock tower of the 13th century *Heilige Johannis Kirche*. Here, most significantly, erudition and learned people are held in high esteem and the students thrive on the free exchange of ideas and impressions within its venerable walls.

The fourth Germany expresses the spontaneous and ingenuous love of the Germans for parades, pomp and panoply. The farmers celebrate the harvest with processions; boys' bands parade in their colorful medieval uniforms; the ageless Pied Piper, beloved by all, lures both young and old; hunting masters pass by with their trained falcons still used for sport; sharpshooters and bemedalled veterans march—all evoking many memories and apprehensions both inside and out of Germany, that perhaps history might again witness the great engulfing surges which darkened Europe in 1789, 1806, 1871, 1914, 1939. However, we are assured by the narrator somewhat unctuously that "German leaders have stated there is no cause

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1960. 408 pp.; 75 ills., tables $6.50

AUDIO-VISUAL PROCEDURES IN TEACHING
LESTER B. SANDS,
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An exhaustive survey of all the important audio-visual procedures and materials as they apply to every level of education — from elementary school classes through college and adult education. Book provides a wealth of helpful suggestions and practical laboratory exercises, plus lists of sources from which audio-visual materials may be obtained. Throughout, each kind of instrument and procedure is related to the whole teaching process.
1956. 670 pp.; 271 ills., tables $7.00

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for alarm," and "Militarism is dead as stone." The film ends on the new generation, the new prosperity and the effective role this new generation is to play in the future of the West and the world.

Appraisal

This film, recommended for high school use, is an overview of West Germany's re-emergence and does provoke unresolved questions into the myriad and complex problems facing her and, most important, her role in the concert of nations. However the narration is often rather banal and monotonous and the film could have been improved had it been given more depth.

—Robert B. Pettijohn

The Chinese Village

(Colonial Williamsburg, Inc., Audio-Visual Department, Williamsburg, Virginia) 12 minutes, 16mm sound, color, 1958. $65.00.

Description

The Chinese Village uses an antique Chinese wallpaper in the Governor's Palace in Williamsburg, Virginia, to illustrate the legend of the mountain village whose noisy and quarrelsome inhabitants are changed into storm clouds. It shows how, through the will of the gods, it becomes a happy village where all who come find the magic of happiness and contentment.

A story within a story, the film begins with a very old man telling two listeners how their village came to be known as the happy village. According to the legend, it used to be peopled with noisy and quarrelsome men who constantly fought with each other. This angered the peace gods so much that they changed all people, except a young man, into storm clouds. This young man had been chosen to tell the story because he was the only good man in that village. He was to stand by the bridge, a lotus branch in his hand, until a man came down from the hills.

On the same night that the villagers were changed into clouds, a traveler on horseback got lost among the hills. After spending six days looking for a way out, he came upon the deserted village and the lone young man by the bridge. Sadly the young man told his story after which, much to the traveler's amazement, he turned into a lotus tree.

Greatly excited, the traveler rode back to the city and straight to the temple where he told the priests what had happened. The learned ones consulted their books and scrolls and came to the conclusion the gods wished them to go to the deserted village. Seeing the beauty and fertility of the valley further convinced them that the gods wanted the place to be alive with happy people.

So, people came—people from all walks of life—and soon the empty houses were filled with new faces. Gratefully, the people built a temple by the tree to honor the gods.

The film finally brings the audience back to the old man and his two listeners as he concludes his story by saying that all who pass the lotus tree find within the village the "magic of happiness and contentment."

Appraisal

The Chinese Village has wide age and interest usage. It may be used as a story film for children in the elementary grades. With the story, the child can get an introduction to Chinese life

The Williamsburg tapestry from which this story is taken.

—homes, implements, and food. It might also be used with a creative writing group or an art class on the secondary or even college level. Some camera effects are excellent, but the very frequent flip change from one scene to another gives the film a filmstrip effect. At other times a movement into, or fade into, the subsequent picture is very effective. One evaluator questions the use of a female voice when a man is supposedly relating the tale. Also, there seems to be a sameness, an intoned quality, in the voice. However, this may have been a purposeful attempt to blend with the high pitched, fairly even tone of the music which, incidentally, provides an authentic background for the picture.

—Herminia M. Barcelona

FILMSTRIPS

by Irene F. Cypher

Sometimes, as we watch classes in action, we think how unfortunate it is that so many teachers and group leaders expect a filmstrip to "teach." We have yet to see the filmstrip (or any other type of instructional material for that matter) which, by some magical process, does a complete job of teaching anything.

A filmstrip can stimulate interest, present facts, show a series of scenes of foreign places or people, outline the steps to take in some scientific process, indicate what to do under certain conditions, etc. *But*, and this is what bothers us, the mere showing of such a series of pictures is not "teaching with pictures." There must be discussion; there must be time to weigh and talk about evidence shown; there must be explanation for some of the facts given; there should be analysis of details presented. In other words, there should be an opportunity to consider and talk about the relationship of the visualized presentation to the subject content or scope of an area of study. Unless we do this, the use of visualized materials can be meaningless and add little if anything to the study of any subject.

So much can be done with visualized materials that it makes one sorry to see golden opportunities wasted; wasted for lack of time given to the planning of proper introduction and discussion, lack of time for viewing and reviewing, lack of time allowed for quiet consideration of what is being viewed. We should be more alert to this and give more time to considering the way in which we use and present materials in learning situations. The producers are giving more time to careful attention of what is included in filmstrips; we in turn should give equal time to considering how best to relate this material to our own classes. *China; Communism in Asia* (single strip, black and white; *New York Times*, Education Department, Times Square, New York 36, N. Y.; $2.50 single strip, $15 for complete monthly series). The information presented in this filmstrip gives us ample material on which to base good discussion of affairs in the Orient and in China itself. This is visualized reporting and it provides a visual newspaper for students to use in their consideration of world affairs. Interest is centered on why communism in China is a threat to world peace; on the relations of the Peiping government to the Soviet Union and the effect of this relationship on free or democratic countries in the Orient. Good for world history and social science study in the middle and upper grades.

Conservation (3 sets of 3 filmstrips per set, color; produced by Conservation Foundation and distributed by Encyclopaedia Britannica Films, 1150 Wilmette Ave., Wilmette, Ill.; $54 for complete set, $18 per set of three filmstrips. The overall design of this series is to present the concept of Balance, Demand and Supply of natural resources. The presentation has been divided into units suitable for the middle grades, the junior high schoo' and the senior high school. At the elementary level we are given an idea of what is needed in order to provide man with food, clothing, shelter and the necessities of life.

The junior high set carries the story further by showing why basic materials may not be available and how nature's supply is depleted by constant use. At the senior high level the story is carried still further by showing us how the scientist, biologist and the chemist are working to provide artificial or snythetic materials to help supply needed items. This is a very good, common sense approach to the problem of why man needs natural resources, why we should conserve these resources, and why scientific research and experimentation are so important today. The visuals are interesting, and the material well planned to evoke study and discussion.

French For Beginners (6 units of materials; produced by Teaching Audials and Visuals, 250 West 57th St., New York, 19, N. Y.; $33 per unit of filmstrip, record, wall chart, pin pointer and teacher's manual). The boy or girl who is just beginning to study a new language needs to have things to look at, sounds to hear and pictures that will attract and hold his eye while learning to pronounce new words and phrases. This series is carefully planned to give the beginner just such help, in terms of good clear pictures, good clear pronunciation of new words, and an explanation of what French boys and girls do in the classrooms, at home and on trips to see points of interest in their communities.

This is language teaching in terms of "language using" and it is well designed to meet the actual needs of pupils. Perhaps if this type of material is used to introduce a pupil to language study, he will learn to use

(Continued on page 33)

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the language as a part of his life experience. Recommended for beginning French at any grade level.

Great Lakes–St. Lawrence Lowlands Region (2 strips, color; produced by National Film Board of Canada and available from Stanley Bowmar Co., Inc., 12 Cleveland St., Valhalla, N. Y.; $5 per strip). "Manufacturing in the Lowlands" and "Steel and the Automobile" give us a good idea of how our neighbors in the St. Lawrence lowlands section of Canada work to produce and manufacture many of the vital necessities for modern life. Present day conditions make it important to understand the problems of this country to our north, and this material is very good for any consideration of western hemisphere resources. These filmstrips take us to the steel mills, the electric plants, the logging mills and the textile mills. We see how raw materials are processed, and there is good material for comparison and contrast with a study of our own centers of industry. Good for social science and world history in the middle and upper grades.

Instructional Materials For Agricultural Education (5 filmstrips, color, with manuals; produced by California State Polytechnic College, San Luis Obispo, Calif.; 4 strips $4.50 each, 1 strip $4.75, extra manuals .50 each). This is material prepared for specific purposes and well designed for any class or group in which the problems of agricultural education are considered and studied.

Separate titles are "Commercial Beef Cattle Projects"; "Fat Lamb Project Problems"; "Vegetables"; "Catching and Handling Poultry"; 'Fitting and Showing FFA Beef." Actual photographs bring us right to ranch and farm, and we see how cattle are handled, cared for and prepared for marketing. Because there are no captions we get the full benefit of pictures which are close enough to serve as a "field-trip" type of visual; we get next to the objects and are close enough to see what is to be studied.

The manuals provide full detailed information, and the entire series is planned to be of help in the study area for which it is intended. This is an example of material designed for a specific purpose and produced in a way which makes it usable and useful. Recommended for courses in agriculture and animal husbandry and for 4-H Clubs.

Nature's Wings And Petals (3 strips, color; produced by Curriculum Filmstrips, Herbert M. Elkins Co., 10031 Commerce St., Tujunga, California; $4.50 per strip). Here we have the visual story of moths, butterflies and mountain wildflowers. Close-ups bring us into contact with the specimens, and the color quality is good. Details of wing formation, petal structure and shape, color gradation, and general form and shape are clearly shown in such a way as to help the viewer learn to recognize the objects. Material of this type is good for classroom science and nature study and it is also good preparation for nature walks and field trips. In the filmtrips dealing with moths and butterfiies we are also shown the life cycles of both. The series is a good one for grades 4 through 8.

New Basic Weather Series (4 strips, color; produced by Society for Visual Education, 1345 Diversey Parkway, Chicago 14, Ill.; $19.80 per set, $5.50 single strips). The titles of the separate strips in this series are the questions most frequently asked about weather–"Why Does the Wind Blow?" "Why Does the Weather Change?" "Why the Seasons?" Why Does It Rain, Snow, Hail and Sleet?" Pictures in the series give us an idea of the physical conditions which bring about these weather phenomena, and provide a good basis on which to discuss weather and its relation to life on the earth. The material is good for science in grades 6 to 9. The photographs will attract the pupils' interest and the descriptions are well given.

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By Philip Lewis, Board of Education, Chicago

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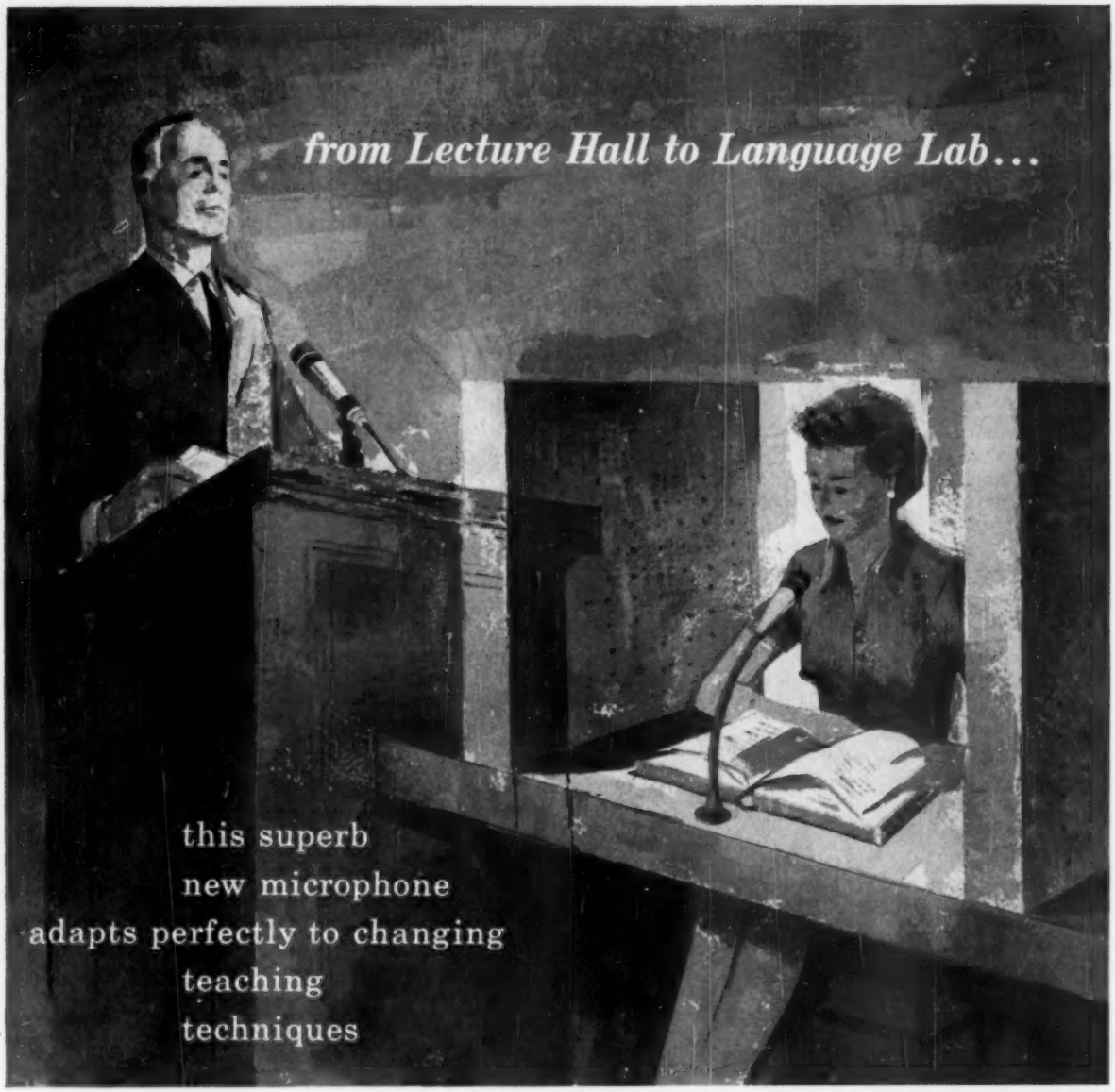

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AUDIO

by Max U. Bildersee

The Inaugural

Inaugural Day, 1961, can be used for a quick review of what previous presidents have said on the parallel occasion, and for a review, too, of immediate and long range accomplishments of the occupant of the office of president. This can be 'triggered' by use of radio or television to hear or watch and hear as the new president takes office and delivers his inaugural address.

The discussion can be intensified by use of recordings recreating past inaugurals. It is possible to go back to the Roosevelt inauguration in 1933 to hear again his "The only thing we have to fear is fear itself" speech. This is available on a number of records including Columbia's *I Can Hear It Now* and many others. Of more recent vintage, Roosevelt's inaugural addresses of January 20, 1941, and January 20, 1945, are heard on The Spoken Word's *Inauguration Address* (SW-112) and these are backed up by Harry S. Truman's address beginning his elected term as president in 1949.

Did your school record the presidential inaugural addresses in 1953 and 1957? It may be worthwhile to ask whether school archives include these tapes. If they are available, you have an almost complete history of inaugurals from 1933 to the present time and covering a fast moving triple decade. If these are not available, the story of national development, involvement and progress can largely be indicated by the records already mentioned and my reports on other such addresses. And if you did not record the earlier addresses for your school archives, there is no better time to begin than in 1961!

For the instructor wanting to go back to the beginnings of the United States in this connection, she can find Ed Begley's reading of George Washington's First Inaugural Address on Caedmon's *Great American Speeches* (TC 2016) which also contains a reading by Melvyn Douglas of Thomas Jefferson's First Inaugural Address. And to needle students into discussion there are several reports of campaigns in which the losing candidate is prominent and which can trigger the question, "If elected, what do you think this man would have said in his inaugural address?" These include *Campaign '56* (Yale Sterling Memorial Library), *I Can Hear It Now,* in which the Dewey-Truman and Dewey-Roosevelt campaigns are summarized and Caedmon's *Great American Speeches* which includes a reading of William Jennings Bryan's "Cross of Gold" speech.

Shakespeare, W. (1564-1616)

There are so many recordings of Shakespeare's works—and so many of them worthy of your attention—that a summary of them is well in order at any time. One reason for this is that Shakespeare wrote for a largely illiterate audience, and he wrote for them to hear rather than see what was going on before them. His plays need minimum-to-no special adaptation for presentation in strictly audio media.

Many recordings select from a variety of plays to present an overall picture of the man's genius. One of these, *Ages of Man* (Columbia OL 5390), includes scenes from "As You Like It," "The Merchant of Venice," "The Tempest," "Romeo and Juliet," "Measure for Measure," "Henry IV, Part I,"

Shakespeare On Records

AS YOU LIKE IT	*Anew McMaster*	*Spoken Word SW-A4*
CORIOLANUS	*Anew McMaster*	*Spoken Word SW-A17*
HAMLET	*John Gielgud*	*RCA Victor LM 6007*
HAMLET	*Laurence Olivier*	*RCA Victor LM 1924*
HAMLET	*John Gielgud*	*RCA Victor LM 6404*
HAMLET	*John Gielgud*	*Decca DL 9504*
HENRY V	*Laurence Olivier*	*RCA Victor LM 1924*
JULIUS CAESAR	*Anew McMaster*	*Spoken Word SW-A15*
KING LEAR	*Anew McMaster*	*Spoken Word SW-A9*
MACBETH	*Alec Guiness*	*RCA Victor LM 6010*
MACBETH	*Anthony Quayle*	*Caedmon SRS 231*
MERCHANT OF VENICE	*Paul Sparer*	*Lexington 7540*
MIDSUMMER NIGHT'S DREAM		*RCA Victor LM 6115*
MUCH ADO ABOUT NOTHING	*Anew McMaster*	*Spoken Word SW-A6*
RICHARD III	*Laurence Olivier*	*RCA Victor LM 6126*
RICHARD III (highlights)	*Laurence Olivier*	*RCA Victor LM 1940*
ROMEO AND JULIET	*Alan Bau...*	*RCA Victor LM 2064*
ROMEO AND JULIET	*John Gielgud*	*Decca DL 9504*
ROMEO AND JULIET	*Anew McMaster*	*Spoken Word SW-A16*
TAMING OF THE SHREW	*Anew McMaster*	*Spoken Word SW-A7*
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David Allen, on Poetry Records, reads 16 Shakespeare sonnets. These are "Not marble, nor the gilded monuments," "Look in thy glass, and tell the face thou viewest," "Music to hear, why hearest thou music sadly?," "When I consider everything that grows," "My mistress' eyes are nothing like the sun," "That time of year thou may'st in me behond," "Then hate me when thou wilt; if ever now," "Shall I compare thee to a summer's day?" "When to the sessions of sweet silent thought," "When in disgrace with fortune and men's eyes," "Devouring Time, blunt thou the lion's paws," "When I have seen by Time's fell hand defaced," "Since brass, not stone, nor earth, nor boundless sea," "How heavy do I journey on the way," "To me fair friend, you never can be old" and "Let me not to the marriage of true minds." Critics agree that this is a very fine recording and Louis Untermeyer has said that the poems "are read with the greatest authority and sensitivity."

Christopher Casson sings *The Songs of Shakespeare* on Spoken Words record SW-159. He includes 33 selections from "Much Ado About Nothing," "As You Like It," "Merchant of Venice," "Two Gentlemen of Verona," "Hamlet," "Measure for Measure," "Love's Labour Lost," "Winer's Tale," "Midsummer Night's Dream," "The Tempest," "Merry Wives of Windsor," "Henry VIII," "Cymbeline" and "Twelfth Night."

Spoken Arts (766/7) offers Anew McMaster playing the lead role in a group of excerpts from Shakespeare plays. Those included are "Hamlet," "Macbeth," "Othello," "King Lear," "The Merchant of Venice," "Romeo and Juliet," "Julius Caesar," 'As You Like It" and "The Taming of the Shrew." These are exceptionally welll performed selections in which Mr. McMaster is able to display his unuaual histrionic talents.

The number and variety of complete Shakespearean plays—or long excerpts—available is remarkable considering the age of the material and the intense competition in the recording field. As teachers we are the fortunate group to profit from this tremendous library of material. In many cases we can offer our students comparative performances so that they can contrast the interpretation and the delivery of actors.

In the interests of brevity we shall merely list the play, the recording artist, and the publisher with his number. Suffice it to say that these are all worthy of presentation to class groups. The list is on the preceding page.

Just For Listening

Some of the recent recordings which may interest teachers for use in class and which have appeal beyond that for home collections and for library use are useful additions to school collections. We have in mind that the development of a listening center in the school library is apropos. We have in mind that the gifted student can, or at least should be able to, go to the library, select a recording of interest and sit and listen to a spoken or musical presentation. The simple devices are sometimes overlooked in our search for media which widen appreciation

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and offer additional and exceptional experiences to our unusual students. Through such experiences we can increase the depth as well as the breadth of study for those students who seek and can conquer additional study areas.

For instance, it may be that Adlai Stevenson will go down in our textbooks as one of the men who in a secondary position contributed greatly to the thinking and actions of America in times of great concern. As a presidential candidate—and potential nominee—he was able to secure the support of many millions of us. Spoken Arts, recognizing this, offers *Portrait of Adlai Stevenson* (Spoken Arts 770) in which the former governor of Illinois and former Democratic candidate is interviewed in simple ad lib form by Arnold Michaelis. In the recording Stevenson is prodded and prompted to recount many of the more amusing incidents of his political career. He discourses at some length on both his personal and his political outlook and informally deals with personal problems which have confronted him in his outstanding career both as a public servant and candidate, and as a citizen.

Ah, Oobleck At Last

Ted Geisel, who is better known to children the country over as Dr. Seuss is represented in three stories released on a single Camden record. This is Camden CAL 1035 and includes "Yertle the Turtle," "Gertrude McFuzz," "The Big Brag" and "Bartholomew and the Oobleck." The last mentioned story involved King Grimalkin of Didd who is determined that four seasons are insufficient for his country. He directs his magicians to add to this, and they do. They add oobleck.

Oobleck enmires all caught in it, and soon all traffic in the kingdom is literally stuck. Only when the king accepts defeat and says "I'm sorry!" is the problem solved. Similarly, the other three stories (shorter and occupying one side of the record) have simple morals which children understand and react favorably to.

Although the title story involving Bartholomew is long—perhaps too long for continued listening by children—it can be presented serially in two or three sections. It is appropriate to pleasure listening in the primary grades. The other stories, equally interesting to children, can be presented singly to them.

Although the Christmas season is past—the spirit lingers on! There is a new adaptation of Charles Dickens' *A Christmas Carol* which is worth acquiring for immediate use, for deferred use or for addition to loan collections. This is a very good reading and performance in which Frank Pettingsell serves as narrator and portrays Scrooge. In the intermediate grades and in junior high school classes, this recording can be used for pleasure listening or for instruction. It is a Spoken Arts release, number 728.

Capable Latin scholars may profit from hearing Folkways FL 9969 which is a reading, in Latin, of selections from Books I, II, IV and VI of Virgil's *Aeneid*. There are many language recordings—too many to list here—which can be placed in libraries. There are poetry readings and plays. There are songs and stories. These are produced with intent to appeal to listeners with special interests or particular accomplishments. And they are available in Latin, French, Spanish and German as well as in Russian and Greek.

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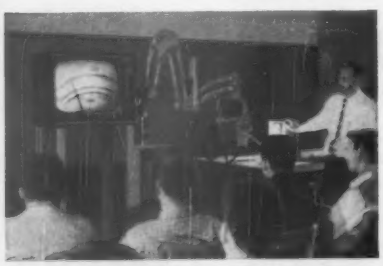

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AV in the Church Field

by William H. Hockman

Editorial Comment

• We believe that TRAFCO (1525 McGavock St., Nashville 3, Tenn.) would be pleased to send to all interested persons a reprint of an article by Mr. Robert G. Glazier in which he discussed the past, present and possible future of the AV movement in the Methodist Church. He starts in the Twenties and brings you down to now. Very revealing to all who did not travel this road like I did, part of it as a Director of Education in a local Methodist church. Of course there are problems, but the Television and Radio and Film Commission of the Methodist church knows where it wants to go in serving its denomination, and that is much more than can be said of some other pretty large denominations which don't as yet have such a unified TV-AV group.

• We would like to do a little repenting. That may be a little strong, however, when what we want to report is a change in judgment or opinion. After seeing *Exploring Ancient Cities* (produced by Family Films, Inc.; see Dec. *Ed Screen*) we must report that we *like* it. It held my interest, instructed me, made me want to use it with both young people and adults, with circles in the church and with adult Bible classes especially. It would be hard, you see, to like (the filmstrip) *Biblical Cities* that much! Now I suppose I like them equally!

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• About this time ministers and directors of religious education, and others, are being asked to teach AV courses in summer leadership and lab schools. In some instances they will be asked to be general AV resource people to other teachers in the same school. This is a good idea. We are for it. The single course is on the way out. All courses, we believe, need to be enriched with AV materials and its methodology. Last year Rev. Harold M. Taber taught a course in the lab school at Albion, Michigan. He not only taught, he left a fine record of his planning, of what he did, how he did it, and an evaluation of the results. This is in mimeographed form, and we believe that, as long as they last, he will send copies to other teachers who request them. Send at least 10 cents in postage. (88 West Waterloo, Box 96, Casnovia, Michigan)

• We believe that more films should be used in series. Once we ran the St. Paul series right through. It was some 3½ hours as we remember. We remember, too, that no one left. We recall that folks commented on what an impact this whole film-story made on them. Now this same idea was carried out with Cathedral's *Living Christ Series*. The producer has a special rental arrangement for those who would like to book these films for a weekly series. It is too long for one sitting, like the St. Paul. How one minister did this is nicely described by him in a reprint from a denominational paper. We believe that The Rev. James G. Ludwig, III, Rector, St. Paul's Church, Elkins Park, Philadelphia 17, would be glad to send copies of this reprint to those asking. Across the 12 Sunday evenings his attendance was good, and the interest keen. He was greatly pleased with his adventure in faith.'

• We believe that the filmstrip as a medium has come ahead in the past two years in several ways. First, there is the whole matter of standards. What a pleasure to have them coming through with green frames on the front and red on the back end! How nice to be able to read the titles right off the film without a magnifying glass! Getting the size of the frame, and therefore the image, is not quite so noticeable. But films is film, and there is a lot of 'temper' in them yet. But, if they were too limp and lacking an inherent 'personality' they wouldn't go through the projector so well. Polished and slicked up, they certainly are taking the wear better and are nicer to handle.

That brings us to the second point of progress for this lowly work-horse of instruction: replacement. Now Family Filmstrips, Inc., has joined those offering to replace worn and damaged filmstrips if returned to them in their can and accompanied by 50 cents to cover the bare costs of handling and postage. This is both generous and fair and ought to encourage ownership, it seems to us.

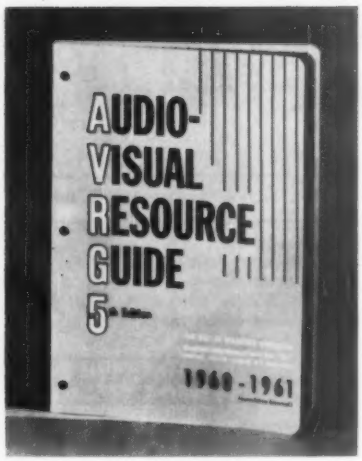
• Two comments in this department recently have brought more mail than anything for a long time: that certain concerns would rent filmstrips, and that professional standards have been developed for the filmstrip as a medium. We believe that many churches are too poor to buy filmstrips. Let me remind you right away that thinking you are too poor is just as effective as being that way. We believe that no church is too poor to start buying filmstrips. Churches, like people, buy what they are convinced they need, what they want badly enough. It is just that simple.

Now, if some concern can rent filmstrips for a while and get churches started using them, get them dependent on them to a considerable degree, will these churches not then begin to buy? We believe they will.

Service Publication

The Audio-Visual Resource Guide is a unique publication. It is comprehensive, reliable, usable and just about indispensable. Now that it is sold at the rock-bottom price of $2.95, no church, no minister, no director should be without it. Just the other day a minister phoned me from a nearby city for information right there in the guide. If he does that twice he will pay the phone company the price of the *Guide*.

The Fifth Edition contains evaluations of 3,000 church-related motion pictures, filmstrips, recordings and slide sets, arranged through the book alphabetically. Hundreds of church workers, educators and AV leaders have hammered out these evaluations as preview committees meet month by month in many parts of the country.



This 1960-61 Fifth Edition can be secured through your denominational bookstore or your AV rental library or dealer, or council of chruches.

Two Great Leaders

History turns on men. When Johanan Ben Zakkai was blessed by the great Jewish Rabbi, Hillel (contemporary of Jesus and teacher of Saul of Tarsus), neither could know just how much history would turn upon the young scholar, soon to carry the precious seed of Jewish learning and plant it in a little seminary at Jabneh. Here the torch of Torah learning burned brightly, and Judaism passed through the Roman destruction to be a precious heritage of the next era. In the two-part color filmstrip with reading script, *Johannan Ben Zakkai*, the life and work of this great Jewish leader is clearly, authoritatively and interestingly set forth. There are 66 frames of good representational art and a well-written script.

These same general characteristics of quality prevail in another interesting filmstrip, *Rashi and The Jews Of Western Europe*, also in two parts. By the sixth century communities of Jews were springing up along the Rhine River and in Burgundy. The filmstrip traces briefly the centers and leaders of Jewish learning, telling in detail the story of Rashi, born in Troyes, France, in 1040. Both of these fine filmstrips would be a valuable addition to the local church's AV library and would bring to youth and adult groups new and interesting and important information in areas much neglected in general as well as church-centered education. Colleges and seminaries, too, will find these useful filmstrips. We highly recommend them. From Alexark & Norsim, 156 N. Arden Blvd., Los Angeles 4, Calif.; price each $7.50.

New Testament Filmstrips

Eye Gate House, Inc., (146 Archer Ave., Jamaica 35, N. Y.) has produced the "Learning From The Stories of Jesus, Part I" series of eight color-art and sound (LP) filmstrips. Four titles are for the 7-11 age level—*Little Queen, Little Old Man, Boy With His Lunch*, and *Jesus and The Storm*. The titles of those for the 9-11 bracket are *Eyes To See, The Wonderful Tree, He Died For Us*, and *He is Risen*.

This means roughly that the first four are for the primary grades and the second four for the junior grades. There are about 40 frames per filmstrip and the records run about 8 minutes. There is a manual for the teacher but (and this is a serious lack) no printed version of the commentary. This we missed very much since there is interpretation and subsequent theology in the commentaries.

The art is good but not outstanding. At times it could have been made more communicative and less in the form of passive illustrations of what the commentary was saying. Beginning and ending and background music lacks attractiveness in quality and deftness in handling. The records are well-cut, clear, and easy to hear.

Of the whole series we liked *Eyes To See* the best. The motivations of the children were more child-like than in others. There was less moralizing, and considerable grace in the structure of the story. We did not like Good Friday pivoting on Pilate's wife and her dreams. And right here we have a weakness of the whole set: dubbing in non-textual materials of little importance. Guessing at the exact content of her dreams is not needed in a filmstrip on the trial and crucifixion of Jesus for juniors. In *The Wonderful Tree* we get pretty far afield on the nature of the Kingdom of God via a fictional story which lacks grace, naturalness, inherent interest and religious impact. We get this along with head-on literalism. We wearied, too, of the use of 'The Lady' for Pilate's wife, and of 'Lady' for Mary in the last filmstrip. This would be my second choice. The 'He Is Risen, Indeed' refrain in the last part of the commentary is a splendid climax.

Here is another instance of where Biblical material has taken the measure of a producer. In his first series, "The Story the Bible Tells," he came off pretty well. Here, in these eight dips into N.T. material, he does not do so well. A statement and reconstruction of the biblical incidents good enough to get general acceptance is hard enough to bring off. To interpret boldly—and for children; to preach dogmatically—and for children; to theologize freely—and all this for children, is to invite the severe criticism of all those who do not honestly share the views and theology espoused.

In conclusion, this reviewer believes that this is *not* the way to make biblical filmstrips and that we need a moratorium on such production until a more inherently suitable format can be forged out in hard thinking.

Two New Teenage Films

A friend of mine says the word 'teenage' is out of fashion right now. Too bad he did not know what word had taken its place—both with teenagers and adults! So what's wrong about having a Teenage Series of films for young people?

Nothing, we say, when they are good. Here are two new titles: *Teenage Loyalty* and *Teenage Conflict*. We give one a rating of 'A' and the other 'B,' in that order. Why a "B" film to a Family Films' production?

Loyalty gets said what it starts out to say, holds the interest all the way with well-cast teenage 'actors' who are pretty convincing. It does emphasize for teenagers that their central loyalties ought to be to Christ and the Church.

Conflict means to help teenagers face the apparent conflict of modern day science and the Bible. Joe Burton is a real youth and acts his part without 'acting.' His sister 'acts' a bit too much. Mother and Dad play their parts with affection a bit too sticky for a film like this. When the Well-Known Scientist enters he is not what we expect. In appearance and clothes, in manners of speaking and in his casualness toward religion (and science, for that matter) he is second-rate. Too, this subject is tough to handle. But here the film does very well. It uses terms like 'faith' and 'belief' correctly.

Useful Filmstrip

The producer (Family Filmstrips, Inc., Hollywood 38, Calif.) says *Easter In The Family*" is a 35mm full-color filmstrip with sound on 33⅓ rpm record, designed to give Christian parents concrete help and suggestions in making Easter more meaningful in home and family." We add: The art is good in style, color and composition; the commentary well written and pleasantly narrated; the musical background tastefully and expertly done; and the leader's guide most helpful. A real addition to the local church's AV library. Buy through your AV dealer.

TRADE DIRECTORY FOR THE AUDIOVISUAL FIELD

KEY: (P)—producers, importers. (M)—manufacturers. (D)—dealers, distributors, film rental libraries, projection services.

Where a primary source also offers direct rental services, the double symbol (PD) appears.

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New Equipment and Materials

For addresses of the sources supplying information on which these listings are based, refer to Directory of Sources, page 50. For more information about any of the equipment and materials announced here, use the enclosed reader service postcard.

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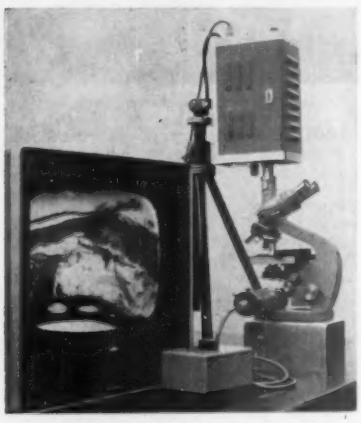

DuMont TV-Micro System

adapter, trinocular head, light source, and four objectives. Plugs into 115v line. 3-lens turret may be added. $2200. DUMONT.

For more information circle No. 101 on return postal card.

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Overhead Projector, Projex 1010, offers increased versatility by its new 360-degree rotating head, easier access by means of new hinged doors, 1000w lamp, 3-position operating switch. Capacity 35mm to 10x10". PROJOPTICS.

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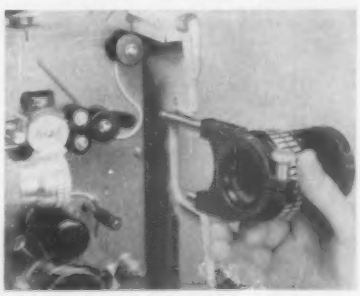
Junior Ozamatic Processor runs all types prints, including transparencies for overhead projection. Temperature max 50 degrees, full exposure at one to 20 feet per minute, curl-free prints stacked front or back; 20½x25x21" deep, wt 170 lb, wired for 60-cycle AC 115 v, line voltage fluctuation compensator. OZALID.

For more information circle No. 107 on return postal card.

Slide Projector Synchronizer adds inaudible slide-change cues to tape-recorded commentary, which, on playback activate remote-control projector. Model 1412 (synchronizer only) $49.95. V-M.

For more information circle No. 108 on return postal card.

"Victorscope" Anamorphic Lens for taking and projecting wide-screen 16mm motion pictures. With plug-in adapter



The "Victorscope"

for Model 70 Kalart/Victor projector $165. May be adapted to other projectors, and to 16mm cameras equipped with 25mm or longer focal length lenses. The lens doubles the width of the image without affecting the height. KALART/VICTOR

For more information circle No. 109 on return postal card.

"Thermo-Fax" Visual Communication combines a heat-activated dry copying machine with an overhead projector, to make up to 8½x11 plastic transparencies from originals that may be transparent, translucent or opaque and printed one or both sides. Transparencies keep indefinitely and new data may be added by a supplementary run through the copying machine. Cost 13c to 16c each. Time 4 seconds. The **overhead projector,** wt 40 lb, 1000-w lamp, 10x10' picture at 15', $395. 3M, Communication Products Div.

For more information circle No. 110 on return postal card.

SOUND, Equipment & Accessories

Compact Professional Recorder. Ampex PR-10 features new electrodynamic frictionless tape handling system that makes possible studio quality in a readily portable unit. Available mono- or stereophonic. Separate record, erase and play heads. 2-speed. Hysteresis synchronous motor. 19" x 14" high. AMPEX-PRO.

For more information circle No. 111 on return postal card.

Duet-90D Tape Recorder permits its two tracks to be played back simultaneously or individually, each erasing and recording separately. $349.50. ROBERTS.

For more information circle No. 112 on return postal card.

Featherweight headphones from Austria weigh only 3 ounces including cable. Low input requirement permits use without power amplifier. Converts mono- and binaural without soldering. Model K-50, stereo, 2x400 Ohms. $31. ELAPP.

For more information circle No. 113 on return postal card.

Four-track Stereo Recorder. Continental "300" features new narrow-gap record-playback head; input jacks for mixing two signals (microphone, tuner or phono); 3-speed (7½, 3¾, 1⅞ ips); pause button; sound-on-sound recording; automatic stop when tape ends; 2 inputs, 4 outputs; high impedance dynamic mike; wt 30 lb, draws 60w 117v AC, $269.50. NAPHILIPS.

For more information circle No. 114 on return postal card.

SOUND, Equipment & Accessories

Lang-lab Microphones. Low cost Model 425 reportedly "student-proof"; more sensitive Model 544 recommended for master function; Unidyne III for lecture hall. SHURE.

For more information circle No. 115 on return postal card.

Magnesound Mixer for professional type results in "sounding" magnetic-striped film. $199.45. VICTOR ANIMATOGRAP.

For more information circle No. 116 on return postal card.

Portable Public Address 8w peak, 8" speaker, wt 9 lb., 12"x10"x6" deep, complete with Shure microphone, 16' mike cable, table stand, 8' power cord, $64.95. Extra speaker with 20' plug in cable, $24.95. Has plug in for phonograph or tape recorder. CHECKEL.

For more information circle No. 117 on return postal card.

Projector-Master Tape Recorder contains electronic sensing device that records an inaudible signal on the tape which automatically advances 2x2 slides in "School Master" remote control slide projectors. Adapter cords available to fit other makes. $249.50. Without electronic projector control $29.50. GRAFLEX.

For more information circle No. 118 on return postal card.

"Tape-o-Matic" Stereo Recorder, 4-track stereo; push button controls; two microphones; add-a-track channel. Model 722 $259.95. V-M

For more information circle No. 119 on return postal card.

Stereo Tape Deck, 3-speed, with four pre-amps and three erase heads, makes possible echo, sound-on-sound, add-a-track direct monitoring, and monophonic or 4-track stereo recording. Model KN-4075 $239.95. ALLIED.

For more information circle No. 120 on return postal card.

Tape Recorder—Astra-Sonic II, carries full year guarantee on parts and labor. Hand-wired amplifier, transformer power supply, ¼-track stereo head, front-mounted speakers (4x6" coaxial tweeter and 4" round), output 8-watts peak, 19lb, monophonic $189.95; stereo $219.95. PENTRON.

For more information circle No. 121 on return postal card.

AUTOMATED INSTRUCTION

AutoTutor Mark II. Smaller version, priced at $900 (Mark I $4,975), provides 9-choice response and a return button, error counter, lid lock to pevent student tampering, provision for auxiliary recorder, capacity up to 5000 siagle frames of filmstrip, interval timing 1/10th to 1/9 seconds, size approx. 15" cube, wt. 35 lb. USI.

For more information circle No. 122 on return postal card.

Teaching Machine, $20; program now available include Russian, spelling, algebra, statistics, Hebrew, and fundamentals of music ($5 to $15), also programmed textbooks which may be

Inexpensive Teaching Machine

used independently of the machines. Produced in cooperation with Teaching Machines, Inc., sold for home study by encyclopedia salesmen. GROLIER.

For more information circle No. 123 on return postal card.

MISCELLANEOUS EQUIP.

New High-Speed 16mm Films. Kodak Double-X 16mm negative, Type 5222, is now available 100' spooled (DXN-430); 200' spooled (DXN432); and 400' on core for darkroom loading (DXN-433-4). Tri-X negative, 16mm with 8mm perforation, 100' spooled (TXN-431). Also spooled film incorporates integral leader and trailer for loading in subdued light. KODAK.

Contact local dealer.

The "Autotutor"

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PASADENA, CALIFORNIA

Acmade Mark II Editing Table, British-made, has non-intermitten film movement 8x6-inch picture, combination 35mm and 16mm, with composite optical and magnetic sowund readers, counters, takeups and titlewinds, $2975. FLORMAN-BABB.

For more information circle No. 124 on return postal card.

Book File for Slides. Each page provides pockets for twelve 2x2 slides; pages fit standard 3-ring binder, 25 sheets $.75; 100 $35. B&J

For more information circle No. 125 on return postal card.

Color Film Cleaner, anti-static formula developed specifically for cleaning color film. 4 oz. 65c, gallon $8.25. EDWAL.

For more information circle No. 126 on return postal card.

Fast Film Cement. Maker claims new chemical assures permanent bond and offers free sample to anyone willing to try it, no strings attached. HARWALD.

For more information circle No. 127 on return postal card.

Filmstrip Table File consists of 4 units, each holding 40 filmstrips, positioned so titles are readily read, may be kept on table or hung on wall, heavy-gauge steel, hammerloid brown finish, 8½x19½x1 — ¾" deep. Each unit $12.80, base for table mounting accommodates 4 units, $2.80. COFFEY.

For more information circle No. 128 on return postal card.

TV Stand-Antenna. The legs of this stand, either 40 or 48" high, serve as an indoor antenna, made shockproof by non-conductive shelf. Safety belt optional. TRANSVISION.

For more information circle No. 129 on return postal card.

NEW MATERIALS

KEY TO ABBREVIATIONS

mp—motion picture
fs—filmstrip
sl—slide
rec—recording
LP—33-1/3 r.p.m. microgroove record
min—minutes (running time)
fr—frames (filmstrip pictures)
si—silent
sd—sound
R—rent
b&w—black & white
col—color
Pri—Primary
Int—Intermediate
JH—Junior High
SH—Senior High
C—College
A—Adult

AGRICULTURE

Arid Lands mp CONTEMPORARY 27-min b&w $125 r$7.50. Why only one-tenth of the earth's surface is producing food, and some of the things that are being done about it. JH SH C A

For more information circle No. 130 on return postal card.

AV industry news

Telectrosonic Expands

A four-story, fully automated production plant with approximately 60,000 square feet of floor space has been added to the Long Island City plant now turning out consumer tape recorders. Harry Sussman, Telectro president, emphasizes that the automated production line permits greater attention to advanced quality control techniques.

SPT Elects

The Society of Photo Technologists has elected its first slate of national officers. Samuel L. Love is president; Harold N. Adams, vice president; Frank Mitchell, editorial vice president; Mrs. Earl E. Bisson, secretary-treasurer.

Lang Lab on Wheels

Rheem-Califone has developed a language laboratory, not just for sales demonstration purposes but for daily use by districts in which small dispersed schools might feel a special electronic room is beyond their means. Trailers are available in 35, 42 and 55-foot lengths, 8- or 10-feet wide, with from 8 to 27 student positions and teacher console.

Palmer Now Service Lab

W. A. Palmer, Inc., San Francisco, will henceforth make available production and laboratory facilities to other producers instead of engaging, as it has since 1936, in direct production of its own.

Religious Film Guide

More than 120 producers release a total of over 400 new religious audio-visual mattrials annually, according to Don Kliphart, editor of the *Audio-visual Resources Guide.* The fifth edition, just out, sells at cost, for only $2.95. A "must" for every religious film producer, distributor, or user. Write direct to DAVBE-NCCC, 475 Riverside Drive, New York 27, N. Y.

Ampex Merger

The Ampex Co. and Telemeter Magnetics, Inc., have merged on a stock-transfer deal, with Ampex the surviving company. Telemeter manufactures tape-handling equipment and computer components. According to *The Film Daily,* Ampex had a $700,000 increase in sales in the six months ending Oct. 31, although its earnings dropped to five cents a share as compared to 80 cents a year ago.

No More Records?

The "Duo-Screen," designed for interlocked operations of two projectors (still and movie), may have educational applications as well as commercial presentation use. The inaudible frequency activating impulse in this case is on the motion picture film

track instead of on a disc recording. A patented plug, replacing the phono pickup cartridge, is fed from the external speaker outlet of the motion picture projector. The results of two screens talking back to each other are interest-compelling. CARGAL.

Ideal Pix Sues Films, Inc.

Charging a combination and conspiracy to eliminate competition in the 16mm non-theatrical field via substantial monoply, in violation of federal statutes, Ideal Pictures, Inc., and 12 of its constituent film libraries have filed a suit for $1,932,000 against Films, Inc. The suit is based on the latter's exclusive non-theatrical rights to Warner Bros., 20th-Fox, SKO Radio, and Republic product. Joined as co-defendants are parent company Encyclopaedia Britannica Films, and several of its officers and directors.

People——

Charles P. Ginsberg, of Ampex Professional Products Company, has received the coveted "Valemar Paulsen Gold Medal" from the Danish Academy of Technical Sciences for his development of the video tape recorder. He is the first native-born American to receive this award.

Homer Humbert, since 1955 advertising manager for several NEA publications, has been appointed director of advertising and public relations at Electronic Teaching Laboratories, Inc.

Manny Kiner has been named director of the Special Products Division at the Elgeet Optical Company, Rochester, N. Y.

ARTS & CRAFTS

Line and Art mp **THORNE** 11min col $110. Concepts of line as visual images are developed, and its infinite possibilities for innovation and interpretation. C.

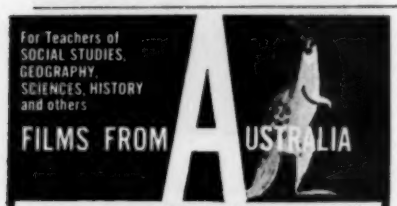
For more information circle No. 131 on return postal card.

Modern Art 5fs LIFE Col ea $6. Titles: Matisse, von Gogh, Roualt, Renoir, Gaughin. Each about 40 paintings. SH C A

For more information circle No. 132 on return postal card.

Orient-Occident: Aspects of an Exhibition mp CONTEMPORARY b&w $100 r$5. Relationship of cultures illustrated by works of ancient sculpture. C A

For more information circle No. 133 on return postal card.



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9710 Conklin Rd., Blue Ash, Ohio

Paul Gaugin fs LIFE col $6. Reproduction in color of 36 paintings from Brittany to the South Seas. SH C A

For more information circle No. 134 on return postal card.

BUSINESS EDUCATION

Ben Franklin Sells Today mp JAM 23-min col $145 r $25. Use restricted to purchaser. Remake of **"Selling America"** has Franklin come alive to show how his principles apply in salesmanship. SH C A

For more information circle No. 135 on return postal card.

EDUCATION

Beginning Lip Reading cards and pictures VAMC. Cards with words and pictures in bright poster colors for teaching deaf children. Beginning set $8.95; Double Lip Reading Set $14.95; Speech Audiometry Set $8.95. TT Spec. Educ.

For more information circle No. 136 on return postal card.

The Film and You (Using the Classroom Film) mp BAILEY 13min b&w $85 col $150. Unique role of motion picture in classroom teaching; preparation, motivation, review, TT A

For more information circle No. 137 on return postal card.

Learning and Behavior mp CAROUSEL 26 min b&w $135. Dr. B. F. Skinner, in experiments at Harvard University Psychology Laboratory, postulates that without reward there is no learning, by animals or man. The "Skinner box" (teaching machine) is demonstrated. TT C A

For more information circle No. 138 on return postal card.

Riddle-a-Rhyme (series) fs EYEGATE col set of 9 $30. Correlated lotto game $1. Designed to help detect difficulties encountered by certain students in articulating key words. T T Pri. El.

For more information circle No. 139 on return postal card.

Youth on the Go mp ILLBELL 30min col loan. After-school activities of high school youth, concentrates on extra-curricular and co-curricular functions. Narrated by Alex Dreier. SH A

For more information circle No. 140 on return postal card.

FEATURE FILMS

The Ballet of Romeo and Juliet mp BRANDON 96min col $50 up apply. Galina Ulanova, the corps de ballet and orchestra of the Bolshoi Theatre, Moscow; music by Sergei Prokofiev, based on Shakespeare. SH C A

For more information circle No. 141 on return postal card.

The Pied Piper of Hamelin mp BIRAD 90min col $750. Classic tale, with Van Johnson, Claude Rains, Kay Starr, Jim Backus, (Mr. Magoo). Entertaining songs, humor, adventure. As presented in an NBC TV "Special." 1958. Pri-A.

For more information circle No. 142 on return postal card.

GUIDANCE, Vocational

New Horizons in Food Service Careers fs NAREST 67fr col permanent loan. Guidance presentation of opportunities in retail food industry for high school or college-trained youth. Booklet reproduces all scenes and captions. Heinz-sponsored. SH

For more information circle No. 143 on return postal card.

HEALTH, SAFETY

Biology and Control of Domestic Mosquitoes mp QWF 21min col $161.98. Training film for public health workers, civic and service groups. SH C A

For more information circle No. 144 on return postal card.

How Do You Drive? mp NFBC 26min b&w $110. A new driver learns how to do it right. SH-A

For more information circle No. 145 on return postal card.

How to Have an Accident at Work mp DISNEY 8min col apply. Donald Duck demonstrates. Pri-A

For more information circle No. 146 on return postal card.

HOME ECONOMICS

Consumers Want to Know mp CONSUN 30min col $125 r$7.50 b&w $60. How the Consumers Union test program operates and how its reports are published. SH C A

For more information circle No. 147 on return postal card.

INDUSTRY, TRANSPORATION

Big League Soldering mp HERCHEM 15min col loan. Detailed instruction on sweat soldering for the plumbing, heating and air conditioning trades. Narrated by sportcaster Mel Allen. SH A

For more information circle No. 148 on return postal card.

The Story of West Coast Lumber fs WCLA 72fr col free. Complete story from tiny seedling to use of finished lumber in home building. E1 JH

For more information circle No. 149 on return postal card.

LANGUAGES

Pathescope-Berlitz Spanish Course 30fs 18rec PATHESCOPE. Indiv sets 5fs, @ $31.25; sets 1-2-3 $210; complete series 1-6 $399. Incl. guide and picture-keyed script for teachers, Spanish script for each student. Story line is young North American's trip through Mexico. Over 50 native voices give wide range of pitch, diction, mood. PATHESCOPE.

For more information circle No. 150 on return postal card.

LITERATURE, DRAMA

Styles in Shakespearean Acting, 1890-1950 sfs CRESOC fs $7.95; tape recorded by Prof. Frederick Packard, Speech Dept., Harvard University, $6.20. Extra copies of script, $1 for 3. SH C A

For more information circle No. 151 on return postal card.

MATHEMATICS

Analog Computor Kit EDMUND $14.95. Demonstrates basic computing principles as applied in multiplication, division, powers and roots, logarithms, trig, etc. Three potentiometers and an electric meter, operates on two flashlight batteries, assembled with screwdriver and pliers. SH

For more information circle No. 152 on return postal card.

MEDICAL & ALLIED SCIENCES

Biography of a Cancer mp CAROUSEL 54min b&w $250. Why the outlook for cancer victims' recovery is increasingly bright. Dr. Tom Dooley, recalled from his work in Laos, gives pre- and post-operative interview. SH C A

For more information circle No. 153 on return postal card.

MUSIC, General

Copland: The Second Hurricane rec COLREC 12″ LP $4.98. A play opera in two acts for High School performance, Leonard Bernstine conducts the NY Philharmonic, and soloists and chorus of the High School of Music and Art, New York City. He also narrates the story. SH-A

For more information circle No. 154 on return postal card.

MUSIC, Vocal

Copland: Dance episodes from "Rodeo" and "Billy the Kid." rec COLREC 12″ LP $4.98. Leonard Bernstine conducting the N. Y. Philharmonic, in commemorative album honoring the composers' 60th birthday. JH-A

For more information circle No. 155 on return postal card.

PRIMARY GRADE MATERIALS

Five Little Pups mp UWF 13min col $110 b&w $60. A little mongrel pup makes up in personality what he lacks in "papers," and wins children's hearts. Pri.

For more information circle No. 156 on return postal card.

Land of Real Believe mp UWF 13min col $115 b&w $60. Blindfolded girl "sees" the world of sounds and memories, and then once more the world of sight. Pri.

For more information circle No. 157 on return postal card.

Little Ballerina mp UWF 13min col $115 b&w $60. Convalescent child dreams of becoming a ballet dancer. Pri.

For more information circle No. 158 on return postal card.

Monkeys Meet the People mp UWF 13-min col $115 b&w $60. Monkey zoo as seen from the inside of the cage, by the monkeys. Pri.

For more information circle No. 159 on return postal card.

Old MacDonald's Farm mp UWF 13min col $115 b&w $60. City boy sees for the first time the animals he has been singing about. Pri.

For more information circle No. 160 on return postal card.

True Book Filmstrips IVES col 3 series of 5 ea. @ $28.50, Indiv. $4.75. Titles: **Natural Science:** Animal Babies; Animals of Sea and Shore; Birds We Know; Insects; Plants We Know; Trees. **Physical Science:** Air Around Us; Deserts; Moon, Sun and Stars; Oceans; Rocks and Minerals; Seasons. Biological Science; Dinosaurs; Farm Animals; Pets; Reptiles; Tropical Fishes; Your Body and You. **Social Studies:** Airports and Airplanes; Health; Houses; Policemen and Firemen; Our Post Office; Schools. K-4. Pri.

For more information circle No. 161 on return postal card.

RELIGION, ETHICS

Brightest Night mp CONCORDIA 15min col $150 r$10. A mother and father tell their children the Nativity story by means of figurines as they decorate the Christmas tree. Pri.

For more information circle No. 162 on return postal card.

The Church at the Campus mp TRAFCO 31min col apply. Three students with widely different personalities come under the kindly guidance of Wesley Foundation head, to the great betterment of their college careers. SH C A

For more information circle No. 163 on return postal card.

Five Films of Worship (series) mp BIRAD 10min col $100 ea. Praised by Protestant leaders for use in inspirational devotional services by all faiths. Titles: **Creation; Exaltation; Reverence; Thanksgiving; The Nazarene.** El-A

For more information circle No. 164 on return postal card.

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16MM

POWER AMONG MEN

"Men build. Men destroy. Surviving men build again. Sometimes there is no survival."

Power AMONG MEN is a film that deals with the ideas and purposes of the more than 90 countries that comprise the United Nations. It is a vivid portrayal of man's awesome powers: the power to build; the power to destroy. How has he used these forces in the past? How will he choose to use them in the future.

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And Broadman's first cartoon-type motion picture is just what you need for a whale of a party. The film shows you how to go about preparty planning, how to conduct the event itself, and how to evaluate its success or failure. Planned for church-related social events, but the ideas and suggestions are great for any group. Filmed in beautiful color. 10 minutes. Rental, $5.00

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BROADMAN FILMS
Nashville, Tennessee

The Sending and the Sent sfs UChC col 89fr LP 22min $3. Honors the 150th anniversary of the American Board of Commissioners of Foreign Missions. JH-A

For more information circle No. 165 on return postal card.

Tooth for a Tooth mp BROADMAN 28-min b&w $180. Dramatic portrayal of effect of harboring a grudge in one's heart; need to recognize a higher law than instinct for self-preservation. JH-A

For more information circle No. 166 on return postal card.

Treasures of Al Decker mp BROADMAN 28min b&w $180. Service station operator is so engrossed in his business affairs that he neglects his family and religious responsibilities. El-A

For more information circle No. 167 on return postal card.

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Cleans — Lubricates — Prevents Dust Static

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Ecco No. 1300 cleaning fluid, quart, ...$2.50
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Gallon, $6.50

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Film Handling gloves, per dozen $1.95
Gaico Filmeter stop watch, Swiss jewelled movement. Measures equivalent footage for 16mm and 35mm film $24.50

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Plaza 7-6977

Teenage Conflict mp FAMILY 30min b&w $180 r$9. A science versus religion issue is raised in a high school student group, and the "science alone" advocate gets a lot to think about from his colleagues. JH SH A

For more information circle No. 168 on return postal card.

Teenage Crusade mp FAMILY 30min b&w $180 r$9. A youth group puts on its own personal crusade for Christ. JH-A

For more information circle No. 169 on return postal card.

Teenage Loyalty mp FAMILY 30min b&w $180 r $9. A story of conflicting loyalties and interests in a high school group and of the successful struggle that put their church first in their lives. JH-A

For more information circle No. 170 on return postal card.

Biology and Control of the Cockroach mp UWF 13½min col $90.14. Recognition and control measures, including new insecticides to cope with strains that have developed resistance to chlordane. SH C A

For more information circle No. 171 on return postal card.

Biological Techniques 3mp THORNE col Genetics: Techniques Handling Drosophila 3min $40; Bacteriological Techniques 5min $60; Removing Frog Pituitary 1min $20. SH C

For more information circle No. 172 on return postal card.

Chick Embryo Explantation mp THORNE 8min b&w $40 r$2.50. One simple method from the egg to an agar growing medium in a petri dish chamber. SH C

For more information circle No. 173 on return postal card.

Darwin's World of Nature (Series) 19 fs LIFE col ea $6; 4 for $20. Titles: Darwin Discovers Nature's Plan; Enchanted Isles—The Galapagos; Rainbow Realm of Tropic Insects; Living Animals of South America; South American Fossils; Tierra del Fuego and the Andes Mountains; The Cocos Islands; Symbiosis—Strange Partners in Nature; Evolution Today. JH SH C

For more information circle No. 174 on return postal card.

Frog Heartbeat mp THORNE 7min col $70 r$5. Heartbeat of pithed frog photographed in extreme closeup and slow motion; Kymograph recording of the heartbeat analyzed. SH C

For more information circle No. 175 on return postal card.

Germfree Animals in Medical Science mp UWF 19min col $122.09. Techniques for creating a germfree environment and its importance in biological research. SH C

For more information circle No. 176 on return postal card.

The World Within mp UCLA 27min col $155. Overall concept of parasitology and its relation to biology and medicine. SH C

For more information circle No. 177 on return postal card.

SCIENCE, General

Simple Machines: The Inclined Plane Family mp EBF 11min col $120 b&w $60. The concept of work is explained in terms of force and distance; principles of the inclined plane; applications in the wedge and the screw. Int

For more information circle No. 178 on return postal card.

Teaching Science in the Elementary School 4fs LONG col. Titles: **The World Is So Full of a Number of Things** (K); **All About Milk** (Pri); **Science in the Magic Story of Water** (Int).

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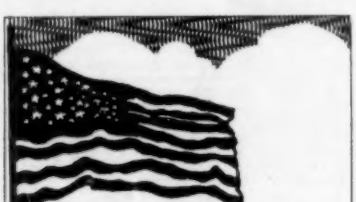

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AUDIO - VISUAL MATERIALS: THEIR NATURE AND USE. Revised Edition By Walter Arno Wittich and Charles F. Schuller. 570 pp. 249 Illustrations 14 Color Plates. Harper & Brothers 49 E. 33rd St., New York 16, N. Y. 1957. $6.50.

EDUCATORS GUIDE TO FREE FILMSTRIPS. Compiled and Edited by Mary Foley Horkheimer and John W. Diffor. Twelfth Annual Edition, 1960. Educators Progress Service, Dept. AVG, Randolph, Wis. $6.00.

EDUCATORS GUIDE TO FREE TAPES, SCRIPTS, AND TRANSCRIPTIONS. Compiled and Edited by Walter A. Wittich, Ph.D., and Gertie Hanson Halsted, M. A. Sixth Annual Edition. 1960. Educators Progress Service, Dept. AVG, Randolph, Wis. $5.75.

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STANDARDS OF PHOTOPLAY APPRECIATION. A Course of Study in Photoplay Appreciation. By William Lewin and Alexander Frazier. Illustrated. Educational & Recreational Guides, Inc., 10 Brainerd Road, Summit, New Jersey. $2.95 on approval.

Directory of Sources and Materials Listed on pages 41-50

AFL-CIO—American Federation of Labor and Congress of Industrial Organizations. 815 16th St., NW, Washington 6, D. C.
ALLIED Radio Corp., 100 N. Western Ave., Chicago 80, Ill.
AMPEX-PRO — Ampex Professional Products Company, 934 Charter St., Redwood City, Calif.

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BIRAD Corporation, 35 W. 53rd St., New York 19, N. Y.
B&J—Burke & James, Inc., 321 S. Wabash Ave., Chicago 4, Ill.
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BRANDON Films Inc., 200 W. 57th St., New York 19, N. Y.

CAR—Carousel Films, Inc., 1501 Broadway, Suite 1503, New York 36, N. Y.
CENCO—Central Scientific Co., 1700 W. Irving Park Road, Chicago 13, Ill.
CHARTPAK, Inc., Leeds, Mass.
CHECKEL—Checker Electronics Corp., Grayslake, Ill.
COFFEY, Jack C., Co., Inc., 710 17th St., North Chicago, Ill.
COLREC—Columbia Records, 799 Seventh Ave., New York 19, N. Y.
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CRS—Children's Reading Service, 1078 St. John's Place, Broklyn 13, N. Y.
CURMAT—Curriculum Materials Center, 5128 Venice Blvd., Los Angeles 19, Calif.

DISNEY, Walt, Productions, 16mm Division, 2400 W. Alameda Ave., Burbank,, Calif.
DOVPUB—Dover Publications, Inc., 180 Varick St., New York 14, N. Y.
DUMONT—Allen D. Dumont Laboratories, Industrial TV Sales Dept., Div. of Fairchild Camera Co., Clifton, N. J.

EASTMAN KODAK—See Local Dealer.
EBF—Encyclopaedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Ill.
EDMUND Scientific Co., 101 E. Gloucester Pike, Barrington, N. J.
EDWAL Scientific Products Corp., 555 W. 119th St., Chicago 28, Ill.
ELAPP — Electronic Applications, Inc., Stamford, Conn.
EYEGATE House, Inc., 146-01 Archer Ave., Jamaica 35, N. Y.

FAMILY Filmstrips, 5823 Santa Monica Blvd., Hollywood 38, Calif.
FLORMAN & BABB, Inc., 68 W. 45th St., New York 36, N. Y.
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HARWALD Company, The, 1245 Chicago Ave., Evanston, Ill.
HERCHEM—Hercules Chemical Co., 416 Broadway, New York 13, N. Y.

IFB—International Film Bureau, Inc., 332 S. Michigan Ave., Chicago 4, Ill.
ILLBELL—Illinoise Bell Telephone Co., (Phone your service representative for bookings)
INDIANA University, Audio - Visual Center. Bloomington, Ind.
IVES — International Visual Education Service, Inc., 300 S. Racine Ave., Chicago 7, Ill.

JAM Handy Organization, 2821 E. Grand Blvd., Detroit 11, Mich.

KALART/VICTOR — Victor Animatograph Corp., div. of The Kalart Co., Inc., Plainville, Conn.

LaPINE—Arthur S. LaPine & Co., 6001 S. Knox Ave., Chicago 29, Ill.
LIBRA Publishers, Inc., 445 W. 23rd St., New York 11, N. Y.
LIFE Filmstrips, 9 Rockefeller Plaza, New York 20, N. Y.
LONG Filmslide Service, El Cerrito, Calif.

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MH—McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36, N. Y.
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NAEC — National Aviation Education Council, 1025 Connecticut Ave., NW, Washington 6, D. C.
NAPHILIPS — North American Philips Co., 230 Duffy Ave., Hicksville, L. I., N. Y.
NAREST—National Restaurant Association, 1530 N. Lake Shore Drive, Chicago 10, Ill.
NFBC—National Film Board of Canada, Canada House—Suite 819, 680 Fifth Ave., New York 19, N. Y.
NORTHERN Films, 1947 14th Ave., N., Seattle 2, Wash.
NYTIMES, Office of Educational Activities, 229 West 43rd St., New York 36, N. Y.

OZALID Division, General Aniline and Film Corp., 17 Corliss Lane, Johnson City, N. Y.

PATHESCOPE Educational Films, Inc., 71 Weyman Ave., New Rochelle, N. Y.
PENNSTATE—Pennsylvania State University, AV Aids Library, University Park, Pa.
PENTRON, Inc., 788 S. Tripp Ave., Chicago 24, Ill.
PIDC—Photographic Importing and Distributing Corp., 67 Forest Road, Valley Stream, N. Y.
PLENUM—Plenum Press, 227 W. 17th St., New York 11, N. Y.
PRENTICE - HALL, Inc., Educational Book Div., Englewood Cliffs, N. J.
PROJOPTICS — Projection Optics Co., Inc., 271 Eleventh Ave., East Orange, N. J.

ROBERTS Electronics, Inc., 1028 N. La-Brea Ave., Los Angeles 38, Calif.
RONALD PRESS, 15 E. 26th St., New York 10, N. Y.

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SAUPPE—Spindler & Sauppe, Inc., 2201 Beverly Blvd., Los Angeles 57, Calif.
SHURE Brothers, Inc., 222 Hartrey Ave., Evanston, Ill.
SUTHERLAND Educational Films Inc., 201 N. Occidental Blvd., Los Angeles 26, Calif.

THORNE Films, Inc., 1707 Hillside Road, Boulder, Colo.
TRAFCO—Television, Radio and Film Commission, The Methodist Church, 1525 McGavock St., Nashville, Tenn.
TRANSVISION Inc., New Rochelle, N. Y.

UCLA—University of California, Educational Film Sales, Los Angeles 24.
USI—U. S. Industries, Inc., 250 Park Ave., New York 17, N. Y.
UWF—United World Films, 1445 Park Ave., New York 29, N. Y.

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(321) **Audio Cardalog**—p. 35, 36

(322) **Audiotronics Corporation**—p. 36

(323) **Audio Visual Research**—p. 47

(324) **Australian News and Information Bureau**—p. 44

(325) **Broadman Press**—p. 45

(326) **Burke & James, Inc.**—p. 47

(327) **Camera Mart, The**—p. 46

(328) **Coffey, Jack C., Co., Inc.**—p. 10

(329) **Coronet Films**—BC

(330) **Dowling, Pat, Pictures**—p. 42

(331) **Eastman Kodak Co.**—p. 7

(332) **Eaton Scientific Corporation**—p. 42

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101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117
118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134
135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151
152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168
169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185
186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202
203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219
220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236
237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253
254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287
288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304
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352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368
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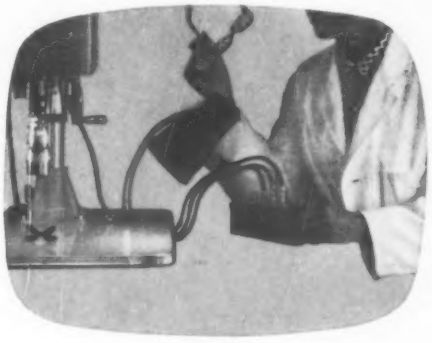

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